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A Case Study of Curriculum Renewal in Adult Basic Education

University — Université

U. of Alberta

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée

Ph.D.

Year this degree conferred — Année d'obtention de ce grade 1984	Name of Supervisor — Nom du directeur de thèse R.G. Martin and M. Szabo

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A CASE STUDY OF CURRICULUM RENEWAL IN ADULT BASIC EDUCATION

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF SECONDARY EDUCATION

EDMONTON, ALBERTA

SPRING, 1984

THE UNIVERSITY OF ALBERTA

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ABSTRACT

Ethnographic methods (questionnaires, interviews, and document analysis) were employed in this case study, to answer three questions regarding the curriculum attitudes of Adult Basic Education (ABE) staff in one ABE program:

1. What are the views of instructors and administrators regarding the curriculum needs, priorities and achievements of the ABE program?

2. How do the views of staff regarding various curriculum development concepts compare with the advice of some adult education experts about good curriculum and instruction practice?

3. What are the views of instructors and administrators who participate in curriculum development pilot projects during the course of the study about the value of the experience to them and to their students?

Conclusions reached regarding the first question are that curriculum in ABE should be functional (related to the real-life problems of adults); students should achieve mastery of important skills (including problem solving strategies); first-line administrators (Program Heads and Senior Instructors) should have a clearer leadership role in curriculum development; the curriculum development process (including planning) should be more systematic; introduction of computers requires a major professional development and policy clarification effort; certain terminology commonly used in discussions of curriculum requires clarification; and staff in general do not credit students with the capability to be self-directed in their learning.

Regarding the second question the conclusions are that principles from the literature of andragogy, mastery learning, and developmental studies are not generally regarded by staff as essential components of the general learning climate, though they are thought by some to be applicable to "special needs" students; and some curriculum elements (especially in the High School department) are chosen expressly to meet Department of Education guidelines for public school youth education.

Regarding the third question the major conclusions are that participation in curriculum pilot projects tended in this study to confirm participants' initial opinions; that participants were favorable to the consultative curriculum development strategy employed; and that students found their participation rewarding for reasons frequently observed in relation to the presence of mastery learning conditions.

Recommendations regarding curriculum needs, priorities and achievements (question 1) are that curriculum should be functional; mastery learning conditions should be implemented; the roles of first-line administrators in curriculum leadership should be clarified; a curriculum development system should be developed and implemented; the institution's policies regarding computer-based learning should be clearly articulated in consultation with instructional staff; curriculum terminology should be carefully defined; and the institution's philosophy of adult education should be stated explicitly.

Recommendations arising from conclusions about the second question are that the implications of the institution's philosophy of adult education should be explored and applied to curriculum and instruction, and information should be provided to staff about current adult education curriculum concepts and practices.

The conclusions of the pilot projects (question 3) lead to the recommendation that more short-term, focused pilot projects be conducted in order to give staff experience with various curriculum innovations and basic concepts, including computers and other technology; that the curriculum development strategy employed emphasize practicality, realism, purposiveness, and judiciousness, and a systematic design procedure; and that student response to curriculum change be an important part of the assessment of all curriculum projects.

ACKNOWLEDGEMENTS

To those who provided help and encouragement:

The Committee;

The students, instructors and administrators of the Alberta Vocational Centre, Edmonton;

The bunch in The States;

And my family --

My thanks.

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Chapter 1

THE PROBLEM OF CURRICULUM RENEWAL IN ADULT BASIC EDUCATION

Background

In times of economic restraint and concern over allocation of scarce resources it is more than ordinarily desirable for educational institutions to assess and improve their efficiency (Konrad and Small, 1979). However, Bosetti (1975:215) found evidence in Alberta's post-secondary institutions of conflicting perceptions, with instructional and administrative staff holding contrary views about such basic issues as the importance of long-range planning, and the evaluation needs within the institution. His findings led him to advise administrators to initiate more interaction to improve understanding of basic institutional goals:

> Administrators . . . should increase their consultations and interactions with faculty and students to ensure that their perceptions of institutional functioning are congruent with those of other institutional members.
> (*Ibid*., p. 219)

There are several serious implications to the suspicion that communications about fundamental elements of institutional life in Alberta's post-secondary institutions are not adequate. In the absence of sufficient consultation and interaction, and perhaps with incongruent perceptions of present functioning, long-term plans may be made, policies set, resources committed, initiatives funded, and, most seriously, potentially untenable commitments made to present and prospective learners. Without detailed knowledge of the views of all involved groups within the institution, planning and action may be impeded by the failings of which Bosetti warns.

If communication about institutional functioning is sometimes inadequate in Alberta's post-secondary institutions, this failing is not due to a lack of available advice about the need for interaction of this kind, nor to any lack of useful models for interaction and change. The literature on organizational development contains advice on the needs and strategies for change (Chin and Benne, 1976; Rogers, 1962), and others have translated this advice to educational applications (Glaser, 1976; Glaser, 1978; Ingram and McIntosh, 1976). More specific guidelines have been developed for the actual conduct of change projects in educational institutions (Havelock, 1973; Small, _et. al_., 1976). And models for change have been developed to meet the needs for greater efficiency and effectiveness, and the professional development of staff in adult education (Konrad and Small, 1979). Within adult education there is encouragement for the use of the findings and tools of other fields to help adult education develop in its own right as a field of study and practice (Campbell, 1977; Boyd and Apps, 1980).

All of the above observations apply particularly to adult basic education (ABE). In this subfield of adult education there is a wide range of opinion about just what it is that is basic about ABE, and what the implications are for content and instructional methods (University of Texas, 1975; Young, 1982; Manzo, 1975; Darkenwald, _et. al_., 1981). Despite more than a decade of attempts to resolve these fundamental issues a UNESCO working group recently arrived at this discouraging conclusion about the efficacy of present ABE programming (UNESCO, 1982:7):

> There is scope for much improvement in development of curriculum and content of instructional material and methods to quicken the pace of literacy learning.

The Problem

Conceptual, analytic and research tools appear to exist for examining the perceptions of staff and students regarding program functioning, and such enquiries are regarded as important by observers such as Bosetti and UNESCO. The problem to be addressed in this study can therefore be stated as follows: Though there is no lack of the necessary tools there is presently little detailed knowledge of the views of those in the field (including students) regarding the curriculum needs of Adult Basic Education. Without such knowledge there is danger of inefficiency or, at worst, failure of ABE to effectively serve its clientele.

What are the views of those involved regarding the present functioning of curriculum in ABE? How much agreement exists among staff at different levels and in different positions regarding needed changes? What do students' views reveal about helpful or problematic practices?

To focus the study the following three research questions were formulated:

1) What are the views of instructors and administrators in an adult basic education program regarding curriculum needs, priorities and achievements?

2) How do the views of staff regarding various curriculum development concepts compare with the published advice of some adult education experts about good curriculum and instruction practice in adult education generally, and adult basic education in particular?

3) What are the views of instructors and administrators who participate in curriculum development projects during the course of the study regarding the value of the curriculum products to students, and the value of the curriculum development process to themselves?

The Nature of the Study

This is a case study of the views of instructional and administrative staff in a large, urban Adult Basic Education program regarding present and proposed or potential curriculum elements. The study involves assessment and projects phases. In the former the views of staff, relevant publications, program history, and available or attainable resources were surveyed. In the latter, the researcher worked collegially with individual instructors who voluntarily expressed interest in participating in development, implementation and evaluation of curriculum pilot projects. The study consists of the findings available to the researcher in these two overlapping phases.

The perceptions of various staff about present and optimum curriculum functioning (the difference in curriculum between "what is and what ought to be"; Small, 1976) formed the focus of the study. The concepts of "goal hiatus" and "goal intensity" (Crown, 1978:5) aided the analysis.

"Goal hiatus" is defined as:

> . . . the perceived gap between the present and desired situation with respect to any aspect of the organization. It represents the extent of change needed to attain a desired goal.

On the more general level, the study was intended to determine what gaps were perceived by staff between present and desired curriculum functioning, and the degree to which the three staff groups perceive the same gaps.

"Goal intensity" denotes "the importance and/or urgency attached to the specific change by each member of the institution" (Ibid.). This concept was noted in this study in staff who identified some curriculum goal hiatus. Goal intensity describes the impetus felt by each individual to work toward lessening the gap between the present and the optimum.

In methodology, the study is "ethnographic," an "extensive descriptive and interpretive effort" at explaining the thinking of various staff holding different positions in the institution (Magoon, 1977:652). The study employs interviews, questionnaires, and surveys of students and staff, methods called "field techniques of the alternative paradigm" by Patton (1975:8). (He argues, somewhat shrilly, perhaps, for the alternative, and against the "dominant paradigm," of "the scientific method"; page 5, emphasis Patton's.) In this case study, in which ABE instructors and administrators articulated and reflected upon their views of the curriculum and instruction needs of their field, a research strategy was required which emphasized "construct validity -- the meaning of events or situations to participants" (Magoon, 1977:669). Therefore, attempts were made in this study to validate observations and to verify testimony received, to ". . . ensure that the structure of events described by the researcher converge [d] with the structure of events held by participants in the event" (Ibid.). The participants in the interviews, questionnaires, and pilot projects were more than just "informants" or "subjects"; they were regarded and relied upon as, in Scriven's (1972) term, "credible witnesses."

Definitions

Academic Upgrading consists of ABE and High School programs, designed to prepare students either for further training or directly for employment.

Administrators are instructional staff with program administration duties which result in their being released full- or parttime from teaching. Administrators in the institution used in this study are designated Program Heads or Senior Instructors.

Adult Basic Education (ABE) is the portion of adult education where the emphasis in curriculum content is on basic reading, writing, and computation skills, approximately equivalent to grades one to nine in public school youth education.

Androgogy is a philosophy of adult education which provides for and incorporates the students' greater needs and capacities for independence and self-direction in learning (Knowles, 1978).

A change agent is an individual who attempts to engage others in identifying problems, designing and applying solutions, and evaluating results, in order to improve outcomes and benefit the participants personally and professionally (Havelock, 1973).

Curriculum in ABE is the experiences and materials provided and arranged by the program (Oliver, 1965).

Curriculum change is any significant alteration in the curriculum intended to provide increased benefits to students (Havelock, 1973:4).

Curriculum pilot projects are projects in curriculum change designed by the researcher, in close consultation with cooperating instructors, intended to demonstrate principles of curriculum or instructional practice advocated by adult education experts, but unfamiliar in the ABE program under study.

Developmental Studies programs are programs of remedial education intended for adult students who are regarded as underprepared for the demands of post-secondary educational programs of colleges, universities, and institutes of technology.

Experts in adult education are defined as those writers who have published opinions or research findings in the areas of adult learning needs, instructional design systems applicable to adult learning, or organizational change and renewal.

Innovation is any change which represents something new to those for whom it is intended (Havelock, 1973:4).

Managers are non-teaching, senior institutional staff. Managers in this study are the institution's President, Vice-President, and Director of the Academic Division.

Mastery Learning is a model of learning which provides for variable amounts of time and practice to learners, in order to foster less (or, ideally, no) variation in achievement at the conclusion of learning (Bloom, 1976).

Renewal is a process in which discrepancies are identified by an institution between what is and what ought to be, and efforts are systematically expended to move toward the desired state (Konrad and Small, 1979:3).

The systems approach to curriculum design is a planned strategy of curriculum change involving identification of broad instructional goals, constraints, characteristics of the learners, and objectives of instruction; development or selection of instructional methods and materials based on the identified needs and constraints; and specification and performance of careful formative and summative evaluation.

Delimitations

The following delimitations apply to the study:

1) The study was delimited to a single adult education institution in Edmonton, Alberta, Canada.

2) The study was further delimited to instructors, administrators, and students who participated voluntarily.

Limitations

A major limitation of the study resulted from the second delimitation. It was assumed that at least some of the instructors and administrators in the institution were "innovators" or "early adopters" (Rogers, 1962:169) of innovations. The voluntary nature of their participation in the study introduced a "self selection" or volunteer bias which may affect the generalizability of the findings.

A second limitation arose from the fact that the researcher was well known in the institution in which the study was conducted. The question of the degree to which staff participation in or reception of the study was influenced by this fact will be discussed in later chapters.

Importance of the Study

Without information regarding practitioners' views of the curriculum and instruction needs of adult basic education students it is impossible to provide effective leadership toward improving institutional functioning, or direction for improvement of present practice. A host of unanswered questions confronts the educational manager or change agent wishing to maintain or improve institutional health by improving functioning of an element of a single program, such as ABE curriculum. What curriculum needs do instructors acknowledge? Do these "felt needs" suggest general satisfaction with present practices, or fundamental dissatisfaction and a desire for basic reform? Are practitioners aware of "expert" opinion regarding optimum learning conditions and practices for adults? To what degree do they accept expert opinion and, where they do not, what are the reasons? How does experience with practical applications of various theories of learning and curriculum development change the views of participants, observers, and administrators (if at all)? What resources are perceived as required to produce both quality curriculum products and a rewarding experience for participants?

Havelock (1973) states that educational leaders have two responsibilities: maintenance and change (p. ix). Of the two, he says bluntly, change is the more difficult, because "Most of the time, most people do not want change" (Ibid., p. 8). Others (Rogers, 1962; Ingram and McIntosh, 1976; Chin and Benne, 1976) join Havelock (1973) in showing how the introduction and management of change is possible, if there is consultation and communication. Havelock (Ibid., p. 19) suggests that a change agent see his role as "put[ing] himself out of a job," by showing the client what resources he already has to do the job himself, and by motivating him to feel capable of doing it. Crown (1978:38) argues that attention to the task and to people are the two most important elements of leadership for change. And Small (1976:5) concludes, simply, that leadership is "crucial to successful renewal projects," and that ". . . participation on the part of personnel affected by change is crucial. "

The major focus of this study was on the views of staff in a working ABE program regarding their curriculum needs. An attempt was made to determine the curriculum goals of instructors, administrators, and managers, and to assess the degree of correspondence between these groups in their curriculum thinking ("goal hiatus"). The views of staff who voluntarily worked on curriculum change projects (those with high "goal intensity") were given special consideration, and were compared with the views of non-participating staff, to determine what effects experience has on convictions about curriculum. Out of this description and analysis came information on the differing views of different staff in the institution, indications of key problematic issues affecting curriculum, evidence of students' views of and behavior under changed learning conditions, and experience with a consultative curriculum renewal process designed to promote change while assessing its effects, thereby permitting "mid-course corrections" (Small, 1976:127).

Chapter Summary

The subject of this study was the views of instructors and administrators in ABE about curriculum and instruction needs for basic level adult students. The object of the study was to describe and analyze areas of substantial agreement and disagreement, and to show the reasoning used by various staff groups in developing their views.

A major assumption of the study is that "renewal" of curriculum, defined as action to lessen the discrepancy between what is and what ought to be (Small, 1976), is both necessary and, as Bosetti (1975) found, difficult to achieve. By developing and demonstrating methods for acquiring and presenting information on the curriculum thinking of staff, it is hoped the study might promote and guide further curriculum renewal efforts.

The research methods employed in the study are those generally termed "ethnographic": in-depth interviews, surveys, and questionnaires. Although the researcher had major responsibility for directing the study, staff participants were regarded as "co-researchers."

Chapter 2

LITERATURE REVIEW

Introduction

The purpose of this study is to gather information about the views of those in adult basic education about curriculum and instruction needs of basic education level adult students. The information gained is expected to show where leadership might be needed and appreciated in fostering curriculum renewal.

In this chapter three areas of research or opinion relevant to the conduct and design of the study are reviewed. First, major research findings from the fields of organizational renewal, innovation and change, and change agency are presented, and some implications for this study are inferred. Second, the views of some adult education experts on the learning needs and preferences of adults which apply to curriculum in adult basic education are presented. Finally, research and opinion related to the ethnographic research paradigm employed in this study are presented and discussed.

Innovation, Change Agency, and Renewal

As Tyler (1975:18) points out, ". . . curriculum development is a practical enterprise, not a theoretical study." One of the most practical elements of the enterprise is the "marketing" of the product -- that is, the process of fostering knowledge of and interest in the curriculum product among instructors generally, to assure adoption after completion of development. In this section findings are presented from the fields of diffusion of innovations and change agency as they apply to the adoption of educational changes such as new curriculum and instructional practices.

Innovation and Change Agency

In his influential summary of over five hundred diffusion studies, Rogers (1962) drew fifty-two conclusions about the diffusion of innovations (pp. 311 - 14). Two of the most significant of these for the present study are discussed below.

First, lack of adoption of an innovation is not usually the result of a lack of information (p. 108). Although information certainly plays a part in the adoption process Rogers suggests that characteristics of the innovation, and the stages in the adoption process of the group studying it, most determine the rate and ultimate success of the process. Characteristics of the innovation which are significant include:

1. Its relative advantage over present practice.
2. Its compatibility with past experience and present beliefs.
3. Its complexity and ease of comprehension.
4. Its divisibility for small-scale pilot trials.

5. Its communicability to others. (Ibid., pp. 124-33)

Rogers also described the process through which individuals proceed as they adopt or reject an innovation. The five stages of the process are:

1. Awareness -- passive knowledge of the innovation.
2. Interest -- active seeking of more information.
3. Evaluation -- mental application of the innovation to one's own realities.
4. Trial -- actual use.
5. Adoption/rejection. (Ibid., pp. 81-86)

Another factor in the adoption of an innovation is the propensity of the potential adopters to accept change in general. Here, Rogers identifies five adopter categories, with their "salient values."

1. Innovators -- venturesomeness.
2. Early adopters -- respect.
3. Early majority -- deliberateness.
4. Late majority -- skepticism.
5. Laggards -- tradition. (Ibid., pp. 169-71)

Finally, Rogers identifies these important facts about the place of information in the adoption process:

1. Innovators prefer "cosmopolite," impersonal sources of information at the early stages of the adoption process (awareness, interest), and "localite," personal sources at the adoption stage.

2. Late adopters in particular prefer personal sources of information, especially in instances where the choice is at

all uncertain (Ibid., pp. 79; 102; 252).

Not surprisingly, both innovators and late adopters regard well-known sources of information as more trustworthy than less known or commercial sources (Ibid., p. 100).

Rogers' second discovery was that trials of an innovation can shorten the time required for completion of the adoption process (Ibid., p. 113).

This point introduces the need for a change agent to introduce individuals to the innovation and to assure those who wish it have access to the kind and amount of information they require. The change agent might also assist innovators and early adopters with first trial uses of the innovation. Also, given the importance of communication to the whole awareness-to-adoption sequence, the change agent might have a major role in simply conveying information among those involved.

The importance of the change agent appears to be substantial. Ingram (1976) has pointed out that the absence of an institutionalized change agent capability is one of four barriers to change in education generally (p. 164). Rogers discusses the role of the change agent in some detail, offering this advice to prospective change producers:

1. Tailor programs of change to the values and experiences of the client. (Compatibility)
2. Be sure the client sees the need for the innovation. (Relative advantage)
3. Focus on improving the client's problem solving capabilities, not just on installing a particular innovation.

4. Concentrate particular attention on opinion leaders, especially in the early stages.
5. Anticipate and, if possible, prevent negative social consequences of the innovation.

(Ibid., p. 284)

Havelock (1973) provides a much more detailed rationale and more extensive advice for the change agent. Initially he analyzes the three broad roles the change agent might assume:

1. Catalyst. Strong convictions motivate the change agent. Timing, restraint, and seeing the problem from the client's perspective are the major problems.
2. Solution Giver. The most common change agent role. Teaching problem solving skills to the client is central.
3. Resource Linker. The change agent attempts to connect the client with needed resources and thereby "put himself out of work."

(Ibid., pp. 16-19)

Whichever of these general change agent roles is assumed, Havelock advises that the change agent attend carefully to each of the following six change stages. If any stage is not adequately developed, he warns, the success of the process will be jeopardized.

1. Relationship. Formal and informal contacts are made and a realistic, open relationship is established with the client.
2. Diagnosis. The problem is examined, including symptoms, history, and possible causes.
3. Resources. Needed resources, including more information, are determined and acquired.

4. Choice. A range of possible solutions is developed and a choice is made from among them.

5. Acceptance. Using Rogers' data on the adoption process, individuals are exposed to the chosen solution and brought through the adoption process. Attention is given to internal change agents (innovators) whose cooperation will be essential to the future of the change.

6. Stabilization. The potential for self-renewal is achieved by the client. Local control and direction of the change is assumed.
(Ibid., pp. 134-138)

Both Rogers and Havelock emphasize the need for the change agent to enhance the client's self-renewal capability, so that the client may undertake future change projects more confidently and independently. Neither pursues this notion in detail, however, concerned as they both are with changes which involve outside expertise, information or guidance.

A Model of Renewal

Konrad and Small (1979) have developed a model for the development of institutional renewal strategies useful to an institution which wishes to develop its own change mechanisms. Institutional renewal is defined as "a process whereby an institution ascertains its current condition, identifies the discrepancies between what is and what ought to be, and directs its activities toward the achievement of its desired state" (p. 3). The model allows for a "broad spectrum in terms of extensiveness and impact upon an institution" (Ibid.), by variations in the focus, scope and term of the strategies devised. The implementation portion of the strategy is a cycle:

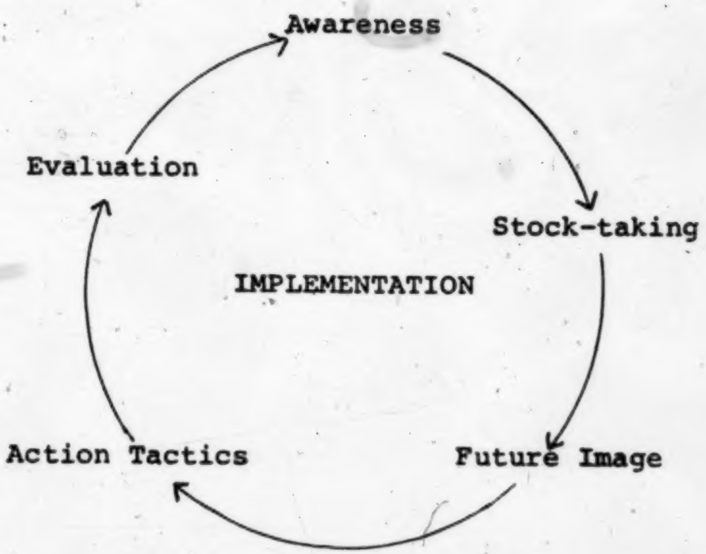

Figure 1:
Implementation Cycle of the Renewal Model
(Konrad and Small, 1979, p. 4)

In the awareness stage, the need or problem is identified and publicized; in stocktaking, current conditions and resources are assessed; the desired future image is generated; action to bring about change is undertaken; and the action taken is evaluated (Ibid., p. 3). Strategies may vary in scope, ranging from those involving one sub-part of the institution to institution-wide initiatives. The term of the strategy might be short or long, depending upon the length of time required for development and implementation. And the focus of the renewal strategy may be upon any of the institution's components (Ibid., p. 4).

Prior to implementation there is a planning and preparation stage where an analysis is done of environmental forces likely to be supportive or resistive to the renewal effort, and of the inertia potential of the strategies under consideration. Should both the environment be unsupportive and the inertia potential of the strategy under consideration be high, success is unlikely. Should any of the other three possible prospects occur, however, successful introduction of the renewal strategy is possible, if "factors in the environment can be controlled and strategies can be selected" to avoid the situation where both are unfavorable (Ibid., p. 7).

Figure two, page 21, shows the Planning and Preparation portion of the model, with the Implementation stage just discussed.

Konrad and Small conclude with the observation that their renewal model might assist those wishing to "meet the challenge of organizational survival in a time of mounting pressures . . . by adopting a rational planning mechanism for the 1980s" (Ibid., p. 11). This goal is similar to that of "getting the house in order," suggested by Mink (1977).

Summary

In summary, the above research has provided several insights into the process of successful change. Rogers has shown that the adoption process in individuals and groups is a complex interplay of information and experience, and that appropriate intervention at key points can direct and accelerate the process. Havelock expands on the nature of the intervention, defining the change agent's role in considerable

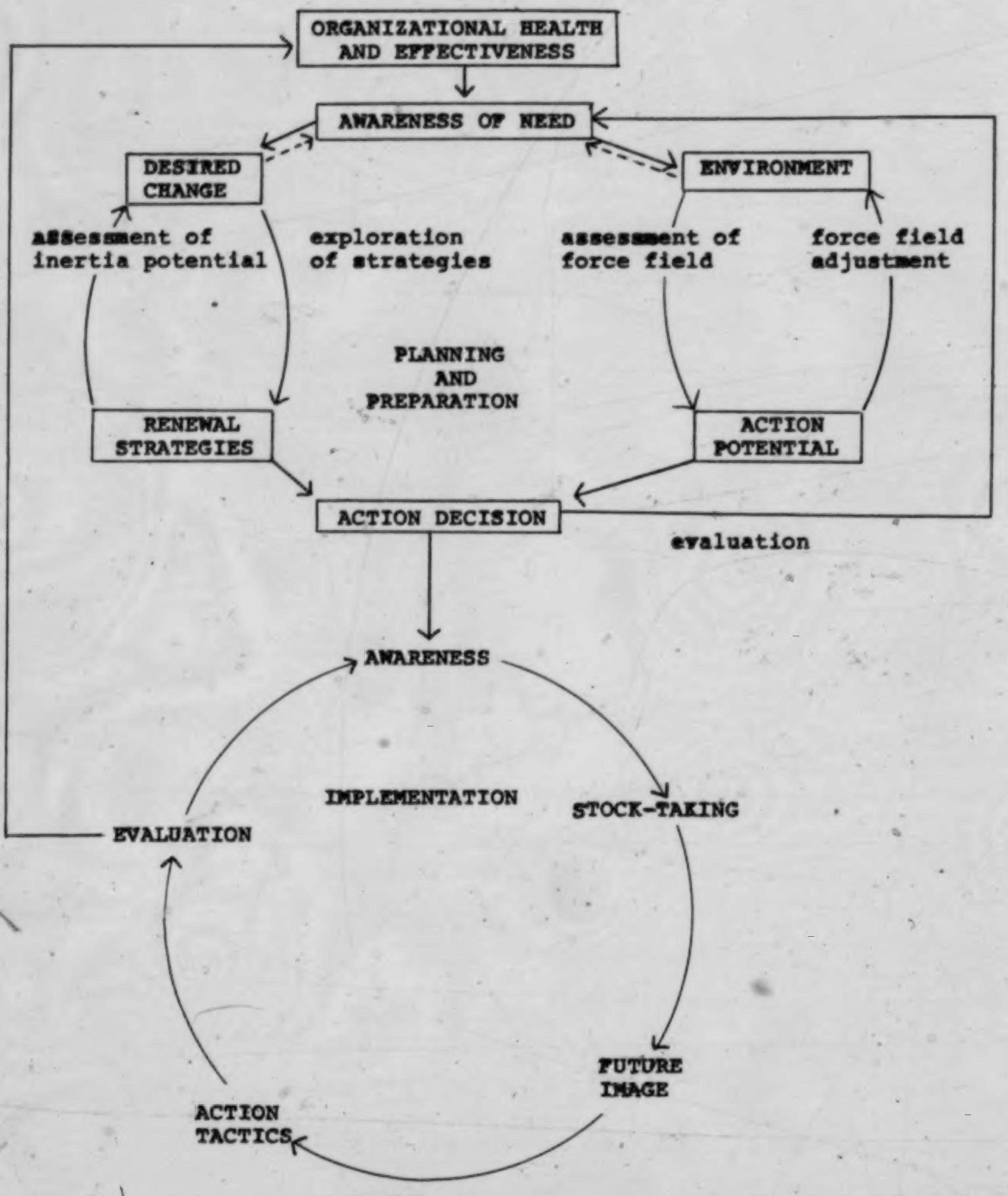

Figure 2:
A Model for Institutional Renewal
(Konrad and Small, 1979:8)

detail. The clear conclusion reached is that lasting change can be created in an institution by the provision of appropriate services, if the total change process is understood and managed properly.

Konrad and Small offer a model for inventing renewal strategies suited to institutional realities and needs. Use of their model to develop renewal strategies which themselves incorporate findings about the process of change should produce powerful methods for influencing such institutional components as curriculum. More specifically, in the planning and preparation stage information and communication of appropriate kinds (i.e., cosmopolite for early adopters, localite for late adopters) should be shared, to heighten awareness and generate interest among staff. Responses of staff to these initial activities will give an indication of the inertia and support for the strategy. If signs are unfavorable, the proposed strategy may be revised or abandoned in favor of one more attractive to staff. A collective evaluation of resources available for renewal may also help get the project off to a realistic start.

In the implementation stage, Rogers' data on adopter categories becomes particularly relevant. The early adopters and early majority, because they are respected for their deliberateness in decision-making, must be involved. Involving them in the awareness, stocktaking and future image generation parts of this stage, and providing the appropriate kinds and amounts of information, is crucial. If the action proposed is suitable to this group in scope, focus, and term, at least some of these significant staff might be persuaded to participate in the action and evaluation phases.

The major point to be made here is that, whatever strategies are developed to produce change, they must employ the findings of Rogers and others regarding the change process itself. Important considerations include the characteristics of the innovation, the adopter categories of potential participants, the differing information needs of the potential adopters, and the awareness-to-adoption sequence itself. Also crucial is the proper behavior of the change agent proposing the innovation. The renewal model suggests what questions should be asked in the planning, preparation and implementation of a change project; data from research in diffusion of innovations and the guiding of the change process strongly suggest what some of the answers should be.

Opinions of Selected Adult Education Authorities on the Learning Needs and Preferences of Adults

Introduction

In this section, four topics pertinent to adult learning will be discussed, and an attempt made to relate them to one another and to the present study. The four topics are: 1) andragogy, 2) the mastery learning model, 3) developmental studies, and 4) features of curriculum designed especially to meet adult needs. The four topics represent bodies of expert opinion and experience, against which the opinions of the participants in this study were compared. These are educational concepts which are referred to with varying degrees of precision and apparent understanding in the interviews conducted in the study, or which received some mention in institutional writings and planning discussions. It seems necessary to present a discussion of these concepts because in a case study of curriculum thought they could not be overlooked, nor, in the interest of fairness, could judgments and conclusions about these ideas be presented without more background than that given by the participants themselves.

In selecting these four topics, however, there had to be some exclusion. The choice of topics was as follows: the researcher attempted to choose topics significant to the participants (as shown by their spontaneous references to them), and about which there was both strong feeling and at least some misinformation (as inferred by the researcher from the interviews and document analyses). In this section, then, the discussion is of topics judged by the researcher to be, in the minds of participants, significant to future curriculum directions, controversial, poorly understood, or all of these.

Andragogy

The term "andragogy" was imported from Yugoslavia in the mid-1960s by Knowles, to denote the learning requirements of adults which distinguish adult education from pedagogy (1978:51, 54). The key difference between education for children and adults which Knowles wished to emphasize in using the term andragogy is the adult's different "*need* and *capacity* to be self-directing, to utilize his experience in learning, to identify his own readiness to learn, and to organize his learning around life problems" (*Ibid*.; emphasis Knowles'). Knowles does not deny these needs in children. In fact, he observes that the need and capacity to be self-directing "increases steadily from infancy to pre-adolescence, and then increases rapidly during adolescence." He concludes:

> I believe that the assumptions of andragogy apply to children and youth as they mature, and that they, too, will come to be taught more and more andragogically. (*Ibid*.)

Pedagogy is not the opposite of andragogy, but a set of assumptions about the learner appropriate when the learner is relatively highly dependent. As the learner increases in the need and capacity for independence and self-direction, pedagogical assumptions should give way to andragogical ones. The following summarizes some pedagogical and andragogical assumptions, and suggests the developmental continuum which the two terms delineate (*Ibid*., p. 110).

	Assumptions	
	Pedagogy	Andragogy
Self-concept	Dependency	Increasing self-directedness
Experience	Of little worth	Learners are a rich resource for learning
Readiness	Biological development, social pressure	Developmental tasks of social roles
Time perspective	Postponed application	Immediacy of application
Orientation to learning	Subject centered	Problem centered

If pedagogy is not the opposite of andragogy, "conventional" education is. Knowles cites descriptions made by Lindeman in 1926 of some of the errors of conventional education in the practice of adult education:

> . . . the approach to adult education will be via the route of situations, not subjects. Our academic system has grown in reverse order: subjects and teachers constitute the starting-point, students are secondary. In conventional education the student is required to adjust himself to an established curriculum; in adult education the curriculum is built around the student's needs and interests. (Ibid., pp. 28-9)

More recently but with very similar outlook Hannum and Briggs (1982) have summarized characteristics of "traditional" instruction:

> 1. Lecture is the primary mode of delivery of instruction.
> 2. Instruction occurs for a fixed period of time.
> 3. All students begin at the same place and go at the same rate.
> 4. The teacher is qualified to teach by virtue of mastery of his or her content field.
> 5. The logic of the content dictates organization of the instruction.
> 6. The course consists of textbooks, handouts, and lectures.
> 7. Audio-visual media are considered supplemental. (p. 9)

The authors conclude that the problem for adult learning with these traditional learning assumptions, in addition to the inappropriateness of ignoring the students' developmental needs for autonomy and self-direction, is that learning under these assumptions is of "uneven quality" (Ibid.) This is because some students master the crucial concepts in the time allowed while others do not.

In summary, conventional/traditional education differs from both andragogy and pedagogy in failing to provide freedom in learning for students of whatever age to be independent and self-directing to the degree to which they are able. More specifically, traditional/conventional education usurps the student's learning choices, legislating opportunities, resources, and, perhaps most unfortunately, time available for learning. The result is variation in learning, and "uneven quality." Andragogy, on the other hand, provides for freedom in these choices, requiring that programs for adults adapt to the learners' needs and capacities.*

The Mastery Learning Model

In 1962, Carroll published his model of school learning, which has continued to influence the thinking of those persuaded by Knowles' views on andragogy. The Carroll model is particularly valuable in understanding the relationship between some of the characteristics of conventional/traditional school learning and the phenomenon of academic failure or underachievement. Conversely, it also explains why some students excel in this learning environment. A discussion of Carroll's model of school learning will introduce the mastery learning model developed from it by Bloom (1976).

Carroll introduces his model by pointing out that much present learning in schools is "incidental" -- not the result of carefully planned strategies of instruction, but the accidental result of individual students' receptivity and readiness (1962, p. 724). His model offers, in place of incidental learning, the concept of "learning tasks" which "can be unequivocally described and [for which] means can be found for making a valid judgment as to when the learner has accomplished the learning task" (Ibid.). The purpose of the learning task is to produce "transfer": "that degree of competence which will make transfer as automatic as demonstration of performance in the original setting" (Ibid.)

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*Gregorc's (1979) work on "learning styles," though developed in opposition to the "average child concept," supports these andragogic assumptions.

Carroll notes the crucial importance of time to the development of transfer in learning tasks:

> Briefly, our model says that the learner will succeed in learning a given task to the extent that he spends the amount of time that he needs to learn the task. (Ibid., p. 725)

Time is "not 'elapsed time,' but the time during which the person is oriented to the learning task and actually engaged in learning" (Ibid.)

Time required for learning is of two sorts: "time needed" by an individual to learn, and "time spent" by that individual actually in learning. Factors determining the amount of time needed by an individual include his aptitude ("the time required to learn the task"), his ability to understand instruction (composed of verbal ability and general intelligence), and the quality of the instruction. Factors influencing the time spent by the learner on the learning task include "opportunity," or time allowed for learning, and "perseverençe," including time spent by the learner on his own in accomplishing the learning task (Ibid., pp. 725-728).

Several important points emerge from this model of school learning. First, Carroll's definition of aptitude as "the time required to learn the task" emphasizes that power and speed of learning are not necessarily related -- that is, that conclusions should not be drawn about a student's ability ever to learn from his rate of learning. A closely related point is that mastery must be achieved by the learner or his aptitude for successful subsequent learning will be impaired. Carroll insists: ". . . every step of the learning must be prepared for by a previous step" (Ibid., p. 726). Further, if students require different amounts of time to reach the same level of mastery of the same learning tasks, "good" instruction must provide for this variability. Carroll declares: "The instruction must be adapted for the special needs and characteristics of the learners" (Ibid.) If this is not done, some students (those with less aptitude) will be affected more than others. Those least affected will be those who compensate for poor quality instruction by "figuring out for themselves what the learning task is and how they can go about learning it" (Ibid., p. 727).

A second set of observations concerns "opportunity" and "perseverence." Concerning the first, Carroll simply states that instructors and programs vary greatly in the amount of opportunity they permit, and that it would be "intriguing" to measure the discrepancies (Ibid., p. 732). Regarding perseverence he is less oblique:

> Probably one of the most aversive things which a school can do is not to allow sufficient time for a well-motivated child to master a given learning task before the next is taken up.
> (Ibid., p. 728)

He argues that all students can and will show perseverence in learning if given encouragement and instructional materials which reward their extra efforts. Moreover, any student whose ability to understand instruction is less than average, or who experiences poor quality instruction, will depend upon the school, and the learning environment generally, to show perseverence with him, and to provide the greater amounts of time and practice he may require to complete the learning task successfully and with mastery (Ibid., pp. 729-30).

Underachievement, as Carroll regards it, occurs when there is a significant discrepancy between an estimation of an individual's capacity for learning and his actual achievement. Such discrepancies may result from either an inaccurate estimation of the time and practice needed by the individual, or inadequate time spent in learning. In either case, more time for learning is indicated for most students. While conceding "underachievement does not automatically imply the possibility of remediation -- some underachievers remain underachievers" (Ibid., p. 731), Carroll observes that if predictions of students' time requirements for mastery were individual, and if they were made more accurate still by the provision of adjustments as experienced revealed greater need and initially thought, he maintains that underachievement would largely disappear (Ibid., p. 730).

Carroll's model of school learning formed the basis for Bloom's mastery learning model, which assumes that "most individuals can learn what the schools have to teach *if* they are provided with the time and help they need" (1976, p. 207). The *time* element in the mastery learning model follows Carroll's principle of flexibility: students are permitted the time they require to achieve mastery of the material. *Help* consists of "teaching procedures and a set of feedback and corrective techniques to assure a high level of learning for a majority of students" (*Ibid*., p. 3).

The mastery learning model addresses some of the shortcomings of the traditional/conventional model as follows. The concept of "participation" provides that each student has the amount of practice he needs to achieve personal mastery of a skill (*Ibid*., p. 113). In regard to participation, Bloom reports that variations of five to six times are not uncommon, and that in the extreme some students may require up to ten times more practice than the best students (*Ibid*., p. 122). Of the concept of "failure," or lack of achievement, the mastery learning model simply uses tests indicating a student has failed to master the content to prescribe more study time. Bloom asserts that this view of testing and of "failure" makes the system "self-correcting," and eliminates "errors" which occasionally arise in everyone's learning (*Ibid*., p. 210). Overall, the mastery learning model defines "good" instruction as consisting of 1) time to achieve mastery, 2) provision of systematic cues and directions, 3) overt and covert learner participation (practice), 4) flexible amounts of feedback and correctives, as required (Ibid., p. 115).

Learning in this model is individual, but it is far from isolated. Bloom notes that the mastery learning model requires the student to take responsibility for learning (to persevere until mastery is achieved), using the guidance provided by diagnostic tests and other feedback and corrective techniques which the instructor is able to devise. He acknowledges, however, that "the key to the success of mastery learning strategies largely lies in the extent to which students can be motivated and helped to correct their learning difficulties" (Ibid., p. 5). He cites those "highly creative" teachers who have succeeded in "both motivating students to do the necessary additional work and in finding the most effective ways of providing correctives."

> My general appraisal of the work done so far suggests that providing opportunities for small groups of students to help each other has been an effective method of motivating each student to make the correctives and providing the additional time and help he or she needs. Teachers' aides, programmed instruction, audio tapes or cassettes, and other instructional material also appear to work well in particular situations. In very few cases has the teacher provided the additional instruction or help needed. In most cases, the corrective work following the diagnostic-progress-feedback testing is done outside the regular classroom time. (Ibid., p. 5; extended emphasis supplied)

Group work is thus strongly recommended in the mastery learning model, to improve motivation and increase resources available for learning.

As a conclusion to this discussion of Carroll's model of school learning and the mastery learning model, some of Bloom's observations about the effects on students of experiencing learning with this model will be reported. This will also serve to introduce the following discussion of the special needs of students who are termed "developmental" (remedial).

Bloom observes that students in mastery learning vary greatly in the amount of extra time they require to master fixed amounts of material. He adds, however, that this tendency for variation becomes less marked over time, falling from an initial difference of five-fold to an eventual three-fold variation (1974, p. 685). At the same time, he reports, performance of successive learning tasks tends to improve. He summarizes:

> Perhaps all of this is to say that under mastery learning students become more effective in their learning of the subject and need less and less help and time to reach the criterion of mastery. (Ibid.)

Bloom adds, ". . . time and help in the early learning units contribute to the students' better motivation and improved cognitive entry behavior (prerequisite learning) for the later learning units in a sequential series" (Ibid.)

He also finds that while mastery learning students increase their time on task (from sixty-five to eighty-five percent) as they complete a series of learning tasks, students in non-mastery classes actually decrease their time on task (from sixty-five to fifty percent). He concludes: "It seems to us that one group is learning to learn more effectively, while the other group is decreasing in their effectiveness as learners" (*Ibid*., p. 686).

Finally, there is humanitarian benefit for students engaged in mastery learning, especially for those who under non-mastery learning conditions would "fail," and would be held back a year or more to make up their deficiencies.

> Spending extra hours of time within the same calendar period to attain the same level of achievement as one's contemporaries leaves the student with a belief that he is doing as well as others. Spending extra years . . . leaves the individual with the belief that he is inferior to others. (*Ibid*., p. 683)

Summary. This somewhat lengthy discussion of the mastery learning model and its rationale and reported effects on learning is intended to serve as a bridge between the previous discussion of a philosophy of adult education (andragogy), and such practical matters to come as the learning needs and characteristics of the students (especially those classified as "developmental"), and a systematic curriculum development approach. While Knowles' views on the needs of adults are often compelling they are not "practical" -- they do not structure learning events for specific students nor do they guide day-to-day curriculum decisions for the educator. As Cross (1981:221) remarks, in regard to Knowles' claim that andragogy is "the unifying theory," and "the glue to bind the diverse institutions, clienteles and activities [of adult education] into some sense of unity":

> Theory broad enough to cover the spectrum of learning situations in adult education is necessarily so broad that it offers little guidance to either researchers or practitioners.

She concludes (Ibid., p. 225):

> While Knowles . . . has performed a valuable service to the profession in at least setting forth a plan for critique and test in an otherwise barren field, the usefulness of andragogy as a set of guiding assumptions for adult education is at present up in the air.

The mastery learning model, as has been shown, is a down-to-earth guide to practical curriculum concerns. By emphasizing the importance of cues and directions, participation, feedback, and sufficient correctives and time to produce mastery, the mastery learning model furnishes principles of curriculum development applicable to learning at all levels. The specific connection of mastery learning to adult basic education will be made in the next section. Here, a few general points about the usefulness of mastery learning in adult education generally will be made.

Zemke and Zemke (1981:45) begin their article on confidently-held beliefs about adult learning by admitting, "We don't know a lot about the mechanisms of adult learning." They then note (Ibid., p. 48):

> Adults prefer self-directed and self-designed learning projects 7 to 1 over group learning experiences led by a professional . . . . The

> desire to control pace and start-stop time strongly affect the self-directed preference.

Further (Ibid., p. 52):

> Adults report that long lectures, periods of interminable sitting, and the absence of practice opportunities are high on the irritation scale.

The authors advise that, as adults very often have a specific reason for learning, they should be permitted to master what they are studying before moving on (Ibid., p. 46).

Clearly, the mastery learning model addresses many adult learning needs: where adults have specific learning goals, the Bloom-Carroll model specifies "learning tasks"; where adults want to control pace and start-stop time, mastery learning provides flexible time; where adults prefer frequent practice opportunities and less instructor-centered activity, mastery learning offers feedback and correctives, and overt and covert learner participation; where adults want to need to be more methodical, or, conversely, where they elect to defer mastery or even to skip over some content while pursuing more motivating material, the principles of "opportunity" and "perseverence" apply; where, as Tough (1979) reports, many adults have social reasons for engaging in learning projects, mastery learning provides for peer interaction and cooperation.

The particular needs of less academically able "developmental studies" students, as addressed by the mastery learning model, are considered next.

Developmental Studies

Moore (1976:55) defines "developmental studies" as programs and teaching methods for students characterized as remedial, high-risk, marginally-prepared (for further, usually higher, education), or low-achieving. In Carroll and Bloom's terms, these students have lower aptitudes (require more time) for learning because of many factors including previous instructional "errors" (Bloom, 1976:10). As adults*, developmental studies students return to learning with many reservations, which affect their self-confidence and motivation (Snow, 1977:2).

In this section, the literature on developmental studies is consulted to describe characteristics of adult basic education (ABE) students, and to infer their learning needs. The assumption is made here that similarities in learning characteristics and learning histories (to be documented in chapter 5, in the comments of staff and in students' autobiographies) support this correspondence. In the most general sense, these comments on developmental studies are intended to preface the argument in the next section for curriculum systematically designed to meet the needs of adult learners who have special personal and academic needs and preferences.

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*As in the case of the earlier description of conventional/traditional education versus pedagogy and andragogy, this focus on adults must immediately be expanded to include all learners. As Roueche (1977) observes, principles of education for developmental students ("eclectic or holistic programs that focus on the students' growth and development") "make sense for all students" (p. 94).

More specifically, this discussion should show that the philosophy of adult learning called andragogy, and the learning conditions recommended in the mastery learning model, offer great benefits to developmental studies students functioning at the basic education level.

Spann (1977:26) characterizes developmental studies students as "demonstrat[ing] very little self-directing behavior and a great deal of dependent behavior." He ascribes this to "years of conditioning in a learning environment generally unresponsive to their needs" (Ibid.) The result of such treatment, he concludes, is a combination of personal and academic problems all of which require attention.

> As a result of this binding and retarding experience, one of the major tasks of the developmental educator is to help the adult learner meet the need for self-direction by structuring the learning environment that weans the student from dependence and encourages interdependence. (Ibid., p. 26)

Spann recommends the mastery learning model for developmental studies programs because it is "goal oriented and student centered" (Ibid.).

> Learning systems of this type are able to maximize the press of the environment on student behavior and offer most underprepared learners the best chance for gaining and maintaining successful learning patterns. (Ibid., p. 32)

Roueche and Mink (1975), studying the need for students to develop an internal "locus of control" as part of a more independent adult outlook, suggest:

> . . . learner-controlled, self-paced, self-directed learning experiences produce more significant E

> [external] to I [internal] shifts on control expectancy and concurrent changes in the potential mental health correlates of rigidity, anxiety, rationality, self-concept, and achievement than does traditional instruction. (*Ibid*., p. 8)

Snow (1977:2) advises that less attention be paid to student variables and more to learning environment variables, and endorses programs which use methods different from those which have already proven unsuccessful with developmental studies students. Hodgkinson (1975:85) notes that a developmental instructional program should be extremely flexible, concluding that an institution may even "have an individualized instruction program with 10 or 15 students in a group all doing pretty much the same thing in a collaborative way, as long as each student has the right of decision. The focus needs to be on the student's decision to want to learn, what to learn, and how to learn it" (emphasis Hodgkinson's).

Summarizing the attitude of developmental studies instructors, Mink (1977:59) calls for a "responsive environment . . . based on the notion that the institution should be designed to respond to the learner rather than the learner to the institution." This is, of course, the same position advocated by andragogy and the mastery learning model. Whereas andragogy requires attention to the learner's needs because the learner is a self-directing adult, and the mastery learning model does so because no matter who the learners are without observance of individual needs the learning will be "error-full" (Bloom, 1976:10), developmental studies takes this position for the practical reason that non-specific educational treatments have already failed with these students. There is, as well, the further argument that developmental studies programs, designed upon mastery principles, address students' self-concept needs by providing the means for independent decision-making and self-direction.

Andragogy and mastery learning may thus be seen to offer particular advantages to developmental studies students at the basic education level. In the next section, principles for the design of instruction to meet these students' stringent learning needs are presented.

Features of Curriculum Designed for Adults

In this section some of the major conclusions will be summarized from the foregoing discussion of the philosophy and learning conditions most helpful to basic education level adult students with special learning needs and preferences. The purpose of this section is to deduce essential principles adaptable to concrete action from the educational concepts and generalizations about students and their needs which have been presented, and to produce from these guidelines for curriculum development.

First, the philosophy of andragogy suggests that curriculum for adults must respect and foster the adult's need and capacity for self-direction. As Hodgkinson (1975:85) emphatically puts it: "The focus needs to be on the student's decision to want to learn, what to learn, and how to learn it" (emphasis Hodgkinson's). A truly andragogic curriculum will thus naturally be individualized, as it adjusts to the individual learner's needs, capacities, purposes, and previous learning experiences.

Second, the mastery learning model provides general guidance in the construction of curriculum suited to the learning needs and preferences of adults. Chiefly, the mastery model suggests that the curriculum be focused on the student's learning needs via learning tasks with clear mastery criteria, and incorporating the learner's experiences; that it be paced by the student according to his individual abilities and preferences; that it accommodate the student's personal requirements for practice and feedback; that it provide correctives, employing different media and instructional methods, when mastery is not achieved; and that it permit and encourage peer interaction.

Third, focusing specifically on the special learning needs of developmental studies students who have in the past experienced learning problems in traditional/conventional instruction, developmental studies instructors advocate attention to both the academic and personal growth of learners. Emphasis on the learner's right and need for responsible decision-making, and on the need for the institution to adjust its learning environment and practices to meet students' needs, are basic principles of developmental studies curriculum.

In his summary of the present state of curriculum development and organization in education generally, Short (1982:407) discusses three approaches to curriculum development: 1) the scholar-dominated pattern, 2) the milieus experts-dominated pattern, and 3) the balanced-coordinated pattern. From his rather unsubtle designations it is not surprising to learn that Short disapproves of the first two (the first because it produced, as seen in U.S. federally-funded curriculum development projects from the 1950s and 1960s, curricula which were often neither understood nor adopted by the "grass roots," and the second because it is too "trendy," responding to the cultural or social special interests (milieus) which dominate it). He favors the "site-specific/balanced-coordinated/open adaptation strategy" (Ibid., p. 410), because it best meets the four broad curriculum criteria of practicality, purposiveness, realism, and judiciousness (Ibid.). Specifically, Short argues that the most desirable curriculum development strategy is one that:

> 1) Can put its program specifications and related practical guidelines for action into sufficiently concrete form so that they can become integral to curricular frames of reference at the operational level, rather than become, perhaps in part, tacked-on appendages (practicality);
>
> 2) Recognizes that what is to be done in every local circumstance cannot be determined by a single theoretical prescription nor a common rule (practicality);
>
> 3) Gives the leading role of keeping the curriculum development process on task -- and of facilitating the work of all participants in the process -- to a trained specialist in curriculum development who is fully knowledgeable about what issues must be addressed and what technically useful forms decisions should take (purposiveness);

> 4) Proceeds rationally and in an orderly fashion toward the achievement of its goal and tasks, not by a linear process of technological rationality that unfolds foreordained decisions and guidelines, but by a dynamic process of deliberate reasoning that admits various perspectives and seeks decisions that are in harmony with the expectations of all participants (purposiveness);
>
> 5) Is directed toward a common purpose, with compatible procedures, and uses language that communicates effectively among participants and others (purposiveness);
>
> 6) Grounds its work in a thorough and accurate understanding of the particular concrete circumstances of the school, classroom, or teaching/learning environments toward which the development effort is directed (realism);
>
> 7) Recognizes the key role that the teacher plays in interpreting curriculum specifications and guidelines and in making practical judgments necessary for their realization in particular educational environments (realism);
>
> 8) Recognizes the influence of the larger social and political context upon the use-setting for which its development work is intended and consequently develops curriculum specifications and guidelines that can feasibly be enacted within the possibilities and constraints of such a context (realism);
>
> 9) Is itself adequately financed and is sanctioned by appropriate power relationships among funders and users (realism);
>
> 10) Has its decisions as to what should constitute the curriculum, its rationale, and its guidelines for use, arrived at by an open, unbiased search for the educationally sound, the wise, the just, and the good, involving all relevant bodies of expertise (judiciousness).

Based upon Short's analysis, and maintaining requirements of learning designed to be andragogic, mastery-based, and mindful of the special developmental needs of its adult students, the following conclusions about curriculum designed for adults, and strategy for developing it, are proposed:

> In order to meet adult students' needs, curriculum and instructional practices must:
>
> 1) Respect students' needs for self-direction, by accepting students' choices and decisions about the content and form of their learning;
>
> 2) Assist students who are dependent to become more independent;
>
> 3) Provide mastery learning conditions, by furnishing clear learning cues, directions, and mastery criteria, and individual amounts of practice, feedback and correctives, and time to achieve mastery, as required by each learner;
>
> 4) Provide for the personal growth of the individual, as well as his academic growth, by adjusting the learning environment to the learner in order to create conditions conducive to responsible, successful achievement.

In order to meet Short's strategic criteria, the curriculum development process must be:

> 1) Practical, by being concrete and operational, without being dogmatic or authoritarian;
>
> 2) Purposive, by assigning primary responsibility for coordination of development to a specialist who is consultative, flexible, understanding, and sensitive;
>
> 3) Realistic, by being site-specific and cognizant of the importance of support from instructional, political, social, and funds-granting groups;
>
> 4) Judicious, by involving all relevant bodies of opinion and expertise.

A final word must be added here about the problem of translating a disposition into an effective plan. Berte (1975: vii) states: "Probably most educators would agree that the individualization of learning is a good ideal but that also it is extremely difficult to accomplish." As is shown in chapters

5, 6, and 7, this turned out to be an accurate assessment of the views of instructors in this study. However, as Kemp (1977: 5) notes, of the three things needed to produce genuine change in educational behavior -- willing teachers, a supportive administration, and a capable plan -- it is usually the plan which is deficient.

How can planning be made more effective, so that "willingness" becomes a plan of action? As noted in Short's analysis (point 3), and as already discussed in relation to change agency, a key element in the effective planning and execution of change is the presence of a person responsible for directing and evaluating the process, while assuring that all parties have opportunities to participate. Dietrich and Johnson (1967:208) found in a university setting that such leadership formed around it a nucleus of innovators whose collective activity helped produce "a receptive climate for innovation." Havelock (1973:12) argues that the goal of change agency is a change in the client's organizational climate, not simply a solution developed by the change agent to the client's problems. With a change in organizational climate the client becomes capable of producing effective change plans of his own. If, at the same time, innovation is cultivated and experimentation is seen as the norm in the institution, the capacity for implementing self-planned change may become institutionalized (Ibid., p. ix-x).

Whether assisted by a change agent or not, some guidance seems to be needed. Kemp (1977:5) cautions that curriculum redesign will fail to produce improvement if it "assumes traditional approaches and perpetuates an outdated, impractical system." In chapter 5, views expressed by staff in this study will be examined to determine the degree to which they accept expert opinion and experience as a source of guidance in curriculum matters.

Summary

This section has contained a review of elements of andragogy, the mastery learning model (as originated by Carroll and elaborated by Bloom), and some characteristics of developmental studies candidates. The purpose of this section has been to identify implications for curriculum redesign and development. Short's (1982) analysis of possible curriculum development strategies was reviewed and the conclusion reached that a "balanced-coordinated" strategy, meaning one which combines high levels of the four criteria of practicality, purposiveness, realism, and judiciousness, offers the most hope of success to a curriculum change agent. From these criteria, and their underlying rationale, principles of curriculum design for adult education, and of a design process which is both balanced and coordinated, were derived. Finally, the need for guidance of the change process, emphasizing consultation and cooperation on the part of the change agent, was identified.

Ethnographic Research

Some Characterisitics of Ethnographic Research

Beder and Darkenwald (1974), in an article describing reasons why United States Office of Education Title 309b "demonstration project" results had not been more widely disseminated, describe two epistomologically different approaches to research, the deductive-experimental and the inductive-observational. The former, they note, is the "scientific" method of controlled research used to test hypotheses and advance knowledge. The latter's purpose is to "derive theory from observation of human behavior in a naturalistic setting" (Ibid., p. 3), and thereby to apply "science" to the development of solutions to practical problems.

These authors also distinguish between "basic" and "applied" research (Ibid., p. 2). Basic research is usually associated with the deductive-experimental tradition, while applied research is most often approached by inductive-observational means (Ibid). Noting somewhat ruefully that "too often elegance of design and method displaces intellectual substance as the hallmark of excellence in educational research" (Ibid., p. 6), they argue that applied research, employing inductive-observational techniques of data gathering and analysis, is often more appropriate for educational applications because it is capable of greater responsiveness and flexibility. They acknowledge that it is just these characteristics which suggest a "scientific horror story" to some, but persist:

> This eclectic and improvisational style is what is often required if applied research is to yield results in the form of practical solutions to concrete problems of educational policy and practice. (*Ibid.*, p. 13)

Beder and Darkenwald conclude their analysis by offering this advice for the conduct of applied research in the inductive-observational mode (*Ibid.*, pp. 14-15):

> 1) The problem should be identified and defined in close consultation with the client.
>
> 2) In researching the problem, information should also be gathered about the client. To do this, on-site observation, preferably by extended immersion, is recommended.
>
> 3) The research strategy should not be rigidly fixed *a priori*, but should be adjusted as demands or opportunities arise.
>
> 4) At key points the researcher should consult with the client for "reality testing and feedback."

This view of applied research corresponds closely with the following description of ethnographic research by Werner and Rothe (n.d.:2):

> Unlike some other research procedures, there are no formulae, flow charts, or equations already established for the ethnographer to follow. Much of the ethnographic work is *inductive* because of its *situational* character. This makes the fieldworker's attitude to the situation, flexibility in planning, sensitivity to contextual clues, and ability to be comfortable with change and emergence all important aspects of "methodology."

The key point here, as before, is the need for flexibility in response to emerging developments, and the focus on inductive analysis -- the assembling of diverse, unconnected components into a coherent, accurate picture of reality.

Ethnographic Research Methods

Use of ethnographic tools for gathering data and reacting to their contents is commented upon by Saunders (1976):

> The purpose of ethnographic methods is to uncover social, cultural, or normative patterns of a group of people. Generally, this involves an analytic description of a cohort's behavior in terms of a social setting, organization, or culture . . . . These studies incorporate participant observation, intensive interviewing, and qualitative analysis in order to arrive at an understanding of the observed patterns of behavior engaged in by those being studied. (p. 177)

Colaizzi (1978:62) advocates the "dialogal interview" as an especially powerful means of gathering information from individuals, from which to construct understandable patterns of group thought and behavior. Conducting a dialogal interview includes the following steps (Ibid., pp. 59 ff.):

1) Assemble and study the interview protocol.
2) Extract "significant statements", eliminating repetitious and extraneous material.
3) Formulate general meaning statements where possible, tolerating, for the present, any ambiguity which emerges.
4) Return to the interviewee to validate conclusions, to revise impressions as needed, and to resolve ambiguities.

Colaizzi notes that interviews require a different analytic approach from that required for written protocols. He advises "imaginative listening" (Ibid.) to capture the subjects' nuances of speech and gestures. Kerlinger (1973:543) notes that these kinds of methods require a great deal of "observer inference," but adds, "Systems with higher degrees of inference required of the observer are more common and probably more useful in most research."

Giorgi (1975) offers a similar method for collecting and analyzing interview data, involving both careful description of "meaning units," and validation of "central themes" (Ibid., pp. 88 ff). While acknowledging that "an application of phenomenological method" requires that "key notions of science (i.e., objectivity, rigor, research, etc.) and even the notion of science itself will have to be expanded" (Ibid., p. 82), Giorgi adds:

> This expansion does not destroy science or its key concepts; it seeks rather to introduce different ways of practicing . . . science. (Ibid).

As in the case of Colaizzi's method, Giorgi's central concern in developing his "human scientific psychology" (Ibid.) is not iconoclasm, but encouragement of flexibility in authentically scientific investigative methods. He summarizes (Ibid., pp. 55-56):

> We are interested in demonstrating how rigor and discipline can be applied without necessarily transforming data into quantitative expressions, although the latter has its place. The main point . . . is to demonstrate how one deals systematically with data that remain expressed in terms of ordinary language.

In practice, the interview research procedure, employing a very flexible questioning pattern responsive to the respondent's interests and the flow of his thoughts, has been used by Korteweg (1972) to collect data and impressions on the curriculum development process in Social Studies in

Alberta in the 1960s. He used the "elite interview" (Dexter, 1970), with its relative lack of structure, in questioning curriculum developers, policy-makers, politicians, and others, and concluded that this type of interview, if skillfully conducted, encourages pursuit of unexpected points of interest, and is particularly appropriate with respondents who are articulate and reflective.

In this study the student and staff interviews were analyzed using a method proposed by Giorgi (1975). See Appendix S for a detailed description of the analytic procedure and Appendix X for sample analyses of staff interviews, prepared for validation by the interviewees, as Giorgi suggests.

Summary

Ethnographic research methods, employing in-depth interviews and on-site observations, can, if care is taken to validate findings and confirm impressions, produce rigorous and reliable research results. These methods, moreover, may be particularly useful where interviewees, as "co-researchers" (Friere, in Colaizzi, 1978:69) with whom the interviewer has developed rapport and trust, provide sensitive and thoughtful responses. The findings of ethnographic/inductive-observational research, in the form of validated and confirmed statements in "ordinary language" (Giorgi, 1975:56), may be directly applicable to concrete problems or fundamental questions, aligning this research approach with the "applied" research tradition.

Chapter Summary

The characteristics of the innovation, the adopter category of the potential user, the nature of the adoption process, the differing information needs and preferences of different categories of adopters, and the roles of the change agent at different points in the change process influence the change process. The "renewal" model provides a method for developing and evaluating the appropriateness of change strategies, and for systematically implementing strategies which, on analysis of environmental and other variables, appear most likely to succeed.

Assumptions about adult learners must be different from those about children. Learning conditions which provide for the adult's greater need and capacity for independence and self-direction, which present choices in what and how to study, and which take cognizance of the importance of life experience to an adult's learning are andragogic.

Conventional/traditional instruction standardizes time available for learning, thus guaranteeing differences in achievement among students who differ in aptitude. Mastery learning provides for varying amounts of time and learning activities, in accordance with the student's aptitude, with the goal of minimizing differences in achievement among learners. With use of groups and other motivational devices, and assuming suitable instructional resources are available, students may be persuaded to spend the extra time required to achieve mastery outside of regular class time, and without the regular supervision of an instructor. The effects of learning under mastery conditions include more efficient learning and improved self-image, advantages which are particularly salient for students who are termed developmental, that is, who have experienced consistent failure in traditional/conventional instruction.

Curriculum designed specifically for adults will be guided by the andragogic principle of student self-direction, and will therefore strive for maximum "individualization." It will also provide conditions promoting mastery in learning: clear cues, directions, and mastery criteria, and individual amounts of practice, feedback, and time, and varieties of correctives for learners who require them. The curriculum development process used to create adult curricula will be characterized by practicality, purposiveness, realism, and judiciousness and, more importantly, will be guided by a curriculum specialist who, as a change agent, practices the "balanced-coordinated" curriculum development strategy with great skill and sensitivity.

Ethnographic research methods such as in-depth interviews and questionnaires can be effective tools in applied research when applied flexibly, sensitively, and consultatively. Careful observation and description can furnish data in "ordinary language" which may inductively suggest solutions to certain concrete problems. In such research, validation of impressions and conclusions derived from the data may be accomplished, at least in part, by techniques such as interviewee verification of individual interview summaries, and consultation with participants in the study at "key points." Nevertheless, this research methodology entails a good deal of "observer inference," a fact which some commentators regard as advantageous. Some of the skills needed, and advice on applying ethnographic research tools, are available in a variety of previous experience and research.

Chapter 3

DESIGN OF THE STUDY

Research Questions

In order to gather information about the views of instructors and administrators in adult basic education regarding curriculum and instruction needs for basic education level adult students, three research questions were asked:

1) What are the views of instructors and admini in an adult basic education program regarding curriculum needs, priorities and achievements?

2) How do the views of staff regarding various concepts related to curriculum development compare with the advice of some adult education experts regarding good curriculum and instruction practice in adult education generally, and adult basic education in particular?

3) What are the views of instructors and admini who participate in curriculum development projects during the during the course of the study, regarding the value of the curriculum products to students, and the value of the curriculum development process to themselves?

Though the questions were specifically addressed to conditions in the ABE department, it was anticipated that they would be meaningful to all levels, and all instructors, in the Academic Upgrading program.

The research questions were addressed in the assessment and pilot projects phases of the study in a process employing elements of the institutional renewal model, as described further in this chapter.

Question #1: Assessment of Instructor and Administrator Opinions

In order to address the first research question, the following questions were posed to selected instructors and administrators in the ABE department, during the assessment phase of the study:

1) What are the highest curriculum priorities in the area in which you teach/administer?
2) How well are these priorities being met? What ought to be done?
3) What role do you see for yourself in addressing curriculum priorities?
4) What reseouces (personal and institutional) do you require to address the priorities?

Comments were also invited on these curriculum concepts: curriculum development at AVC, computer- assisted instruction, individualized instruction, modularized curriculum, mastery learning, alternative delivery of instruction, and adult learning needs and preferences in the institution.

The following were used to determine staff views:

1) Survey of relevant institutional publications

2) The initial and final staff interviews
3) The initial and final staff questionnaire
4) The Questionnaire Analysis Panel

Survey of Relevant Institutional Publications

The following institutional publications were studied:

a) The Institutional Development Plan (Alberta Vocational Centre, 1978)
b) The Institutional Self-Study (Alberta Vocational Centre, 1979a)
c) The Development of an Innovative Learning System for the Preparation of Nursing Assistants in Alberta (Alberta Vocational Centres, Calgary and Edmonton, 1980)
d) Evaluation of Basic Education and High School Programs at Alberta Vocational Centre, Edmonton (Evaluation Consultants (Edmonton) Ltd., 1982)
e) "The Canada Manpower Training Program: A Policy Review" (Canada Employment and Immigration, Manpower Training Branch, 1977)
f) "Alberta Vocational Training Guidelines and Procedures Handbook" (Advanced Education and Manpower, Province of Alberta, 1978)
g) "Retreat Notes" (Alberta Vocational Centre, 1982a)
h) Curriculum Committee Notes (Alberta Vocational Centre, 1982b)

i) Adult Basic Education Annual Report Submission (Alberta Vocational Centre, 1982c)

j) Various memoranda and minutes

As will be discussed in chapter 4, these sources supplied a survey of curriculum concerns, constraints, and ambitions for the institution for the five year period preceding the study. Where interview findings subsequently revealed strong feelings about any of these institutional assumptions or plans, these were included in the questionnaire and following interviews, in order to assess general staff support for or differences with them.

Initial and Final Staff Interviews

In September, 1982, fifteen instructors and administrators were interviewed by the researcher. The instructors involved were the staff of the ABE math program, in which extensive curriculum development had been undertaken (see chapters 4 and 5). The administrators were the four Senior Instructors in the Academic Upgrading program (High School and ABE), and the Program Heads. These six first-line administrators had primary responsibility for curriculum in the program. Three senior managers represented management's views. The researcher provided typed notes from each interview, and invited corrections to the notes. Corrected interview notes were then analyzed by the researcher for answers to the interview questions. (See Appendix X for examples of the interview analyses produced, and Appendix S for a detailed description of the procedure.)

Near the conclusion of the study (May and June, 1983) the instructors and first-line administrators were provided with notes of their initial interview and were reinterviewed on the same questions. In addition to reporting on their present opinions and answers related to the questions, participants were asked to point out and explain the origins of any changes in their beliefs which had occurred over the year. The same recording and validation procedures as used in the initial interviews were again employed.

Initial and Final Staff Questionnaire

From the results of the initial staff interviews the following general areas of staff concern related to curriculum were identified:

1) Individualized instruction
2) Alternative instructional delivery modes for adults
3) Curriculum innovation and change
4) Computer-based education
5) Learning needs and preferences of adults
6) Curriculum design

The researcher developed the initial fifty-five item Staff Questionnaire (Appendix A) to survey the views of instructional staff related to each of the above areas of curriculum concern. Questionnaire items were frequently expressions of opinions recorded from the interviews, an expression of general feeling toward which the researcher felt was essential to understanding of the curriculum thinking in the ABE program.* The initial Staff Questionnaire was distributed to ABE, High School, and Registered Nursing Assistant (RNA) teaching staff, in order to provide a cross-section of staff reaction.

Near the conclusion of the study (May, 1983), a second twenty-item questionnaire was distributed to these same instructional staff. The second questionnaire was composed of the ten "most agreed with" and the ten "most disagreed with" items, based upon the original questionnaire (Appendix B). The purpose of the second questionnaire was to validate the original twenty items which were repeated, and to assess the degree of change in relatively firmly held opinions over the term of the study.

Questionnaire Analysis Panel

When the initial questionnaire was analyzed and the results studied several results were found to be problematic (Appendix C). To attempt to clarify these findings a group of four experienced instructors was asked to meet with the researcher to discuss the results as a group. In two ninety-minute sessions the sixteen problematic items were discussed, and a transcript was prepared from a tape recording. Participants were asked to correct the forty-six page transcript, after which it was used to clarify the initial Staff Questionnaire results.

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*An exercise in "observer inference" (Kerlinger, 1973:543), based upon frequency of mention and degree of conviction expressed by the interviewee.

Question #2: Expert Opinion

From staff answers to the interview questions about curriculum needs it was apparent that instructors and administrators varied in their awareness and understanding of some commonly used terms denoting various curriculum concepts. (See chapter 5 and Appendix Q for specific examples of differing perceptions.) The following shows terms upon which disagreement or confusion appeared, and the fields from which clarification was sought in the literature.

Terms/Concepts Requiring Clarification	Sources of Clarification
1. Alternative instructional delivery modes for adults 2. Learning needs and preferences of adults	-- Andragogy -- Developmental Studies
3. Individualized instruction 4. Computer-based Education	-- Mastery Learning model
5. Curriculum change and innovation	-- Curriculum renewal and development strategies
6. Curriculum design	-- The "systems" approach

A survey of the literature pertaining to concepts identified as requiring clarification was made and, in the final interview and in discussions with instructors who participated in curriculum pilot projects, discussion of these concepts was initiated by the researcher, as appropriate. A summary of staff comments generally, and of the difference between the views of participants and non-participants regarding some of these, is presented in chapters 5 and 6, in answer to the second research question.

Question #3: Curriculum Pilot Projects

The third research question was addressed in the development, implementation, and evaluation of various curriculum innovations. During the initial assessment phase of the study (May to October, 1982), certain instructors expressed interest in curriculum revision projects of varying scope and term, which would test some instructional theories then under discussion in the ABE program. These individuals were assumed to be "innovators" or "early adopters," in Rogers' (1962) terms, and their influence on the opinions and behavior of later adopters was recognized. Consequently, the researcher discussed possible projects and undertook a needs analysis with these instructors, then attempted to assist as many instructors as possible during the second half of the study (January to June, 1983). In total, five instructors of courses at different levels of the ABE and High School programs participated in producing and piloting some curriculum revision practices advocated in the adult education literature which had been surveyed. The following is a brief description of the pilot projects. (See Appendix W for a complete chronology of the project.)

Ongoing Fractions and Decimals Course. Materials for this ABE math course were systematically redesigned as follows:

1) The goal of the course was stated: to assist students to master the fractions and decimals skills required by the course final exam, including both computation and problem solving/application skills.

2) Objectives were written for the content of the course, as reflected by instructional materials in use in the course in spring, 1982 (Appendix E).

3) Pretests were developed to diagnose student learning needs vis-a-vis each objective (Appendix F).

4) Instructional materials were designed to correspond with the objectives (Appendix G).

5) Diagnostic "Comprehensive" tests were developed as a posttest for groups of objectives (Appendix H).

6) A "Student Profile" sheet was provided to each student on which test results and details of daily progress could be recorded (Appendix I).

7) Exercises and tests on each objective were developed and entered into the PLATO computer-based learning system using the PLATO Learning Management package. The PLATO component provided students with an additional source of practice, including immediate feedback and extensive recordkeeping. (A times table exercise was also developed for students using the PLATO Learning Management package. See below for

more details on PLATO and PLATO Learning Management.)

Classroom practice emphasized student self-pacing and self-direction in learning. Because students in this course had already failed to complete the regular fractions and decimals course in a previous ten-week term, and were thus "ongoing" in this course, a variety of instructional methods was made available. These included instructor tutoring, peer tutoring as it informally developed, a variety of instructional materials available, and PLATO. After students were tested, and shown how to use the testing results recorded on their Student Profile, they used the learning resources as they wished during the daily fifty-five minute instructional period. Outside of class time they were encouraged to spend extra time using the instructional modules and PLATO in order to complete the review they required before writing the final exam again. Tests were available when students felt ready for them, and the responsibility for maintaining the appropriate pace was the students'.

English 13. A small module was developed for this High School level course, consisting of a needs analysis, objectives, testing, instructional modules, and a exercise and testing component on PLATO (Appendix J). The module was piloted with a group of English 13 students in March, 1983.

English 4 - 5. For this ABE course no student-usable instructional materials were developed. Rather, the need for a rationale for the course and systematization of its instructional materials was identified (Appendix K).

English 6 - 7. The problem which emerged in the needs analysis of this course was the lack of a syllabus, or clear course goals from which one could be inferred. Though no instructional materials were generated, present instructional materials were surveyed for one portion of the course, and objectives written (Appendix L).

Reading 10. The "context" unit of this course was analyzed and, on the basis of the needs statement, a placement pretest was developed and pilot tested with students in April, 1983. Materials related to this topic were catalogued and objectives written (Appendix M).

During and at the conclusion of these pilot projects participants' views and reactions were recorded. In some cases the researcher provided instructors with information from the literature, to provide some theoretical background for some curriculum design elements. After the conclusion of the pilot projects each participant was interviewed regarding his or her views on materials and methods developed, the total development task of which the pilot might have been only a part, and the relationship and communication which existed with the researcher (Appendix D).

Use of PLATO Computer-Based Learning

A single PLATO terminal was available during the course of the study and was used to manage the Ongoing Fractions and Decimals course, and the "Word Choice" module in the English 13 course. PLATO Learning Management (PLM) was used to enter material into the PLATO system. PLM is described as follows (Control Data, 1982:1):

> The PLATO Learning Management (PLM) system is a computer-based system that helps authors organize instructional materials for individualized delivery and manages the delivery process for students. Authors need not acquire programming skills in order to use the full power of this system to administer tests, prescribe individual study assignments, and keep important records. PLM is designed to support a well-defined model of instruction characterized by modular organization of content and materials, defined mastery criteria, and self-pacing.

Material for entry into the PLATO system was developed by the researcher, in consultation with the instructor involved, and was entered by the researcher. Below are the totals of test and exercise items developed and entered into PLATO in this way:

Table 1: Numbers of Test and Exercise Items Entered into PLATO

Course	Number of Items
Ongoing Fractions and Decimals:	
Decimals	360
Fractions	520
Times tables	240
English 13:	
Word Choice	210

As noted earlier, student use of PLATO was by reservation, which was accomplished by the student signing his name on the schedule posted near the terminal. Time was allotted in thirty-four units of fifteen minutes each between 8:00 a.m. and 4:30 p.m., the regular ABE program operating hours. (The terminal was available before and after these hours, by special arrangement.) Instructors of classes involved in pilot projects reserved class times for their students each week, at their discretion, in advance of the schedule's being posted for general reservations.

The researcher undertook to orient students to use of PLATO, and was available three days per week during regular program hours to provide assistance with difficulties encountered at the terminal (Appendix N). At other times clerical and instructional staff were available to provide assistance, as the terminal was located in the ABE Resource Centre near instructors' offices and the general office. Students were also encouraged to assist each other with operation of the terminal, if no other assistance was available.

PLM-generated records were used to monitor student use of PLATO, and achievement. The researcher compiled these records and reported to instructors participating in the pilot projects regarding individual and group progress.

More detailed information was provided by the researcher from PLATO records regarding individual students, as requested by the instructor.

Finally, some students were permitted access to PLATO "Basic Skills" or "General Educational Development" (GED) curricula, for extra computer-assisted instruction. These students were either referred by their instructors or requested this extra work on their own. Usually, this required them to come early or stay later in the instructional day.

Role of the Renewal Model in the Study

Introduction

As noted in chapter 2, the study was conceived as both a description of curriculum thought in an adult basic education program, and as an occasion for analysis of the actual working of the "institutional renewal model" in relation to curriculum change. Recall that "renewal" was defined as "a process whereby an institution ascertains its current condition, identifies the discrepancy between _what is_ and _what ought to be_, and directs its activities toward the achievement of its desired state" (Konrad and Small, 1979: 3). The process is "iterative" (Small _et_. _al_., 1976:2) and was depicted earlier as a cycle (see page 19) involving the following stages:

1) Awareness of need;

2) Taking stock of resources and constraints;

3) Developing a future image;

4) Action;

5) Evaluation.

Three "propositions" related to renewal activity are pertinent to this study (Small, et. al., 1976: 129-30):

1) In order to succeed a renewal activity must have the support of those who will be affected by it.

2) The greater the scope of the renewal activity the greater the requisite commitment for the project to succeed.

3) The longer the term of the project the greater the requisite commitment to sustain it.

Participation

A major implication of proposition number one is made plain by Small (1976:20): ". . . participation on the part of personnel affected by change is crucial." Participation is necessary not only to overcome resistance to change but, more positively, because individual and group involvement will assist with problem solving related to the change (Havelock, 1973:12). Gaff (1978:51) uses the term "organic change" to denote change which is tolerated well because it is well prepared for. He also points out that, in reference to this kind of change, "pockets of interest" can be relied upon to appear, and assist the process. Chin and Benne (1976:46) advocate "experience-based learning," and the development of "people technologies" (Ibid., p. 30), to encourage participation and willing involvement in change.

In the "awareness" stage of this study, all staff in the adult basic education and High School programs were invited to become involved through the initial Staff Questionnaire. With this exercise also went the invitation to participate in curriculum change projects, or, alternatively, to observe them at whatever distance the individual chose. More participation was requested of ABE math instructors and the administrators and managers who were interviewed at the beginning and end of the study. Those staff who did volunteer to become involved in the pilot projects phase of the study experienced all of the above, plus additional discussions, interviews, and debriefings regarding results of their pilot project. Participation was thus at many levels for those involved in different ways with the study.

Scale of the Pilot Projects

In the "action" stage of the renewal process, the second and third propositions came into consideration. Small (1976:19) notes that action is almost never based on fully complete information, and advises that the "incremental approach" within long-range plans "is both safe and effective." He explains: "Incrementalism is based on the idea of making small changes and evaluating the results before making further changes" (Ibid., pp. 19-20).

Hannum and Briggs (1982) agree with this scale of change, distinguishing "macro" from "micro" changes and discussing the benefits of the latter where resources are limited. Kemp (1977:8) advocates an incremental approach in introducing the systems approach to curriculum change, which, he says, is "best applied first to individual topics and then to units and then to complete courses, initially involving one or a few teachers."

In the renewal model the scale of change is adjusted by manipulation of focus, scope, and term, as discussed in chapter 2 (p. 19, above). If the environment shows evidence of resistance, or if the characteristics of the proposed change are such that its inertia potential is high, the renewal model advises that scope, focus, and term be manipulated to lessen factors mitigating against success.

The scale of the pilot projects in this study followed the incremental approach to change. Initial activity centred on the adult basic education math area, where addressable instructional problems and early instructor interest were identified. Later pilot projects, still involving single or pairs of instructors, were more limited in scope than the wholesale revision of the complete course, which had occurred in math. This was because of time, but also to avoid arousing resistance. (Though the researcher had educational leave for his work on the pilot projects, participating instructors did not. Gaff and Morstain (1978:73) warn that time, and especially released time from regular duties, is directly related to the amount of innovation undertaken.)

Application of the Renewal Model

As noted above, the renewal model is a cyclical, "iterative" strategy for analyzing needs and possibilities for change (Small, et. al., 1976:2). Because it is iterative, "mid-course corrections" are possible if the scale is small and the term is short enough (Ibid., p. 127).

In the present study, three major iterations of the renewal cycle were performed, as shown in Table 2, page 74. As will be discussed in chapter 5, the findings of this analysis did much to clarify supportive/impetus-fostering factors in the environment, and resistance/inertia-fostering elements of the various curriculum innovations under consideration.

Data Collection

Table 3 (page 75) shows the three research questions, and the required data and data collection methods employed.

Chronology of the Project

Appendix W contains a chronology of the project, including both assessment and pilot projects phases.

Table 2: Considerations Affecting Focus, Scope, and Term of the Pilot Projects

Phase	Focus	Scope	Term
May - August, 1982	- Published plans, statements of the institution - Staff views on curriculum - Recent curriculum projects - literature on adult learning, curriculum design - needs, characterisitics of students	- institutional: global planning documents, statements - program: curriculum issues; resources; student characteristics	- short: present needs, constraints - long: historical patterns, future, published intentions
September, 1982 - January, 1983	- Data from first phase - Further analysis of staff thinking, experience - Response to initial pilot project (ABE math) - Analysis of present, proposed curriculum pilot projects	- program: ABE and High School	- medium (twelve weeks)
November, 1982 - June, 1983	- Data from phases one and two concerning staff views of curriculum, change (fluid and constant opinions) - Long-term pilot project results (especially initial ABE math project) - Potential role of project results on policies, plans - Potential role for staff who participated in projects in future curriculum change - Further staff development possibilities for non-participants	- program: curriculum planning procedures - fluid instructor attitudes; professional development possibilities	- long: long-range planning cycles - changing attitudes, increasing knowledge, experience

Table 3: Data Required and Data Collection Methods

	Question	Data Required	Data Collection
1.	What are the views of instructors and administrators in an operating, well established adult education program, regarding curriculum needs, priorities, and achievements?	-- Official statements of priorities and needs as found in institutional publications -- Opinions of instructors and administrators (including clarification, where needed)	-- Institutional publications (see pp. 58-59, above) -- Initial and final staff interviews -- Initial and final staff questionnaire -- **Questionnaire Analysis** Panel
2.	How do the views of staff regarding **various** curriculum development **concepts** compare with the advice of some adult education "experts" regarding good curriculum and instruction practice in adult education generally, and in ABE in particular?	-- Selected views of some adult education experts relevant to curriculum issues on the minds of ABE staff	-- Literature survey of: - Andragogy - Mastery Learning model - Developmental Studies - Systems Approach to Curriculum Design - Institutional renewal
3.	What are the views of instructors and administrators who participate in curriculum development projects during the course of the study, regarding the value of the curriculum projects to students, and the value of the curriculum development process to themselves?	-- Opinions of staff who had curriculum development experience about the value of the experience and the quality of the product	-- Interviews with participants regarding: - Materials, methods - Total task - Communications - (Appendix D) - Other issues arising

Chapter Summary

The study was designed to gather information about the views of instructors and administrators in adult basic education regarding curriculum and instruction needs for basic education level adult students. Employing ethnographic methods of in-depth interviews, questionnaires, and document analysis, the study addressed three research questions:

1) What are the views of instructors and administrators in an operating, well-established adult basic education program, regarding curriculum needs, priorities, and achievements?

2) How do the views of staff regarding various curriculum development concepts compare with the advice of some adult education "experts" regarding good curriculum and instruction practice in adult education generally, and adult basic education in particular?

3) What are the views of instructors and administrators who participate in curriculum development projects during the course of the study, regarding the value of the curriculum products to students, and the value of the curriculum development process to themselves?

In the initial assessment phase of the study, instructors and administrators were queried regarding their curriculum views, institutional publications were studied, and selected adult education literature was reviewed in order to answer questions one and two. In the pilot projects phase of the study instructors who voluntarily expressed interest in curriculum change were assisted as they analyzed instructional needs in their courses and chose an area (or, in one case, an entire course) for revision. Curriculum changes toward more "adult" learning conditions, as suggested by adult education "experts," included a consultative needs assessment, identification of a learning problem, and, if indicated, development of student-usable instructional materials. (Where student-usable materials were developed and piloted, the PLATO computer system, via PLATO Learning Management (PLM) was used to provide computer management, and flexible access by students to an additional learning resource.) Staff participating in pilot projects were extensively interviewed regarding the products of the pilot project, general curriculum needs related to the ABE program, and the curriculum development process itself, in order to answer the third research question.

The institutional renewal model provided a developmental framework for the study. Through an analysis of environmental factors areas of potential resistance were identified. The characteristics of possible innovations were analyzed for their inertia potential. In both the assessment and pilot projects phases of the study the renewal model's major propositions were acknowledged: the focus was on staff views and on involving those affected by the changes under consideration; the scope of change was determined by the willingness of participants to voluntarily involve themselves; and the term of each project was a function of the participant's enthusiasm and interest.

Chapter 4

INSTITUTIONAL PROFILE

Introduction

Prior to describing in detail the thinking and behavior of the instructors, administrators, and managers who were the focus of this study because of their positions in the adult basic education program, a description of the institution in which the study was conducted is presented. Information is provided about the numbers and characteristics of students served, and the programs themselves, but the central focus is upon the guidelines, policy statements, planning documents, history, and other sources of institutional philosophy. The purpose of this chapter is to acquaint the reader broadly with the environment -- physical, conceptual, legislative, and historical -- in which the study was conducted.

The Institution

General Description

The institution in which the study was conducted, the Alberta Vocational Centre (AVC) Edmonton, is a large, urban, provincially-administered (i.e., it is not governed by a public Board of Governors) adult education institution located in Edmonton, Alberta, Canada. The adult basic education department studied is housed in the institution's Academic Upgrading program, whose purpose is to raise the academic and interpersonal functioning levels of students ranging from illiteracy to high school level. Other full-time programs offered in the institution include Registered Nursing Assistant (RNA), Business Education, English as a Second Language (ESL), and a variety of employment skills (Printing, Building Service Worker, Short Order Cooking, Residential Aide). Table 4 shows the relative sizes of the various programs (A.V.C., 1982d).

Table 4: Fulltime Institutional Enrolment by Program, as of November, 1982

Program	Number of Students	Percentage of Total Enrolment
Academic Upgrading[1]	937	46%
Business Education	281	14
Registered Nursing Assistant	232	11
Vocational Skills Programs	162	8
English as a Second Language	419	21

[1] Includes adult basic education (ABE) and High School students. Throughout the study the ratio of these was approximately 1:3.

Characteristics of Academic Upgrading Students

Table 5 presents further information about the general student population, here compared with the Academic Upgrading program (Ibid).

Table 5: Student Characteristics, All Programs, November, 1982

Characteristic	Institution	Academic Upgrading
Age range		
17 - 20 years	29.9%	32.6%
21 - 29 years	43.3	46.9
over 30 years	26.8	20.5
Sex		
Male	36.5	40.2
Female	63.5	59.8
Marital Status		
Single	55.8	62.4
Married	28.8	19.0
Divorced, Separated, Other	14.6	18.6
Dependents		
With dependents	29.1	37.6
Previous Schooling		
Less than grade 6	3.8	5.5
Grade 7 - 9	16.4	48.9
More than grade 9	65.4*	45.6

*Total is less than 100% because of incomplete student data.

Students in most programs in the institution are "sponsored," receiving a training allowance from one of several sources as shown in Table 6 (Ibid).

Table 6: Student Sponsorship, November, 1982

Source	Institution	Academic Upgrading
Alberta Vocational Training (AVT)	44.5%	74.1%
Canada Employment and Immigration (CEIC)	30.2	7.9
Vocational Rehabilitation for Disabled Persons (VRDP)	2.1	2.6
Indian Affairs (IA)	1.0	1.5
Workers' Compensation Board (WCB)	.5	1.1
Not sponsored (fee-payers)	21.2	11.6
Others	.5	1.2

Relationship with Alberta Advanced Education

As a provincially-administered institution (PAI), the institution is funded and develops its programming mandate in consultation with the Department of Advanced Education. The institution's chief executive officer reports to the Assistant Deputy Minister, Field Services Division. Program Services Division provides support for instructional innovation and planning, while Administrative

Services Division is the financial source. Since the separation of Manpower Services Division from Advanced Education in early 1983, Alberta Vocational Training (AVT) funding for ad hoc programming and student support has been derived from that Division.

Summary

The institution in which this study was conducted houses a number of adult education programs as well as the adult basic education program. The ABE department is part of the Academic Upgrading program, which in total serves one-half of the institution's students. About one-third of Academic Upgrading's students are fulltime ABE students; in addition, the ABE program shares a number of "split" students with the High School program.

As a whole, the institution's student population is under thirty years of age (seventy-five to eighty percent); is about sixty percent female; is unmarried (seventy to eighty percent), and unattached (sixty-five to seventy percent have no dependents); and, except for Academic Upgrading students, has in the majority at least a grade ten education prior to coming back to school. Academic Upgrading students tend to be younger than the institutional average, are slightly more often male, are more often single, have fewer dependents, and have markedly less prior schooling. A plurality of the institution's students receive sponsorship from the Alberta Vocational Training source, while a large majority (seventy-four percent) of Academic Upgrading students do. Nearly one-third of the institution's sponsored students are supported by CEIC, as compared with less than eight percent of Academic Upgrading's students. Fee-paying students (those without sponsorship) make up more than one-fifth of the institution's students, but less than twelve percent of students in Academic Upgrading.

The institution draws support and receives direction from three Divisions in Alberta Advanced Education, but reports with its sister Vocational Centres (in Calgary, Lac La Biche, and Grouard, and well as the Community Vocational Centres, Slave Lake, and the Petroleum Industry Training Centre) to Field Services Division. Recent developments in Advanced Education have, for the first time, removed the major funding source (AVT) from Advanced Education, and placed it in Manpower Services Division.

The Institution's Mission

As noted in Table 6, eighty percent of the institution's, and ninety percent of Academic Upgrading's students are sponsored. The two largest sponsors, Alberta Vocational Training (AVT) and Canada Employment and Immigration (CEIC), have quite specific vocational orientations which directly affect the institution's mission, as indicated in the respective regulations. The AVT fund has this stated purpose (AVT Guidelines, 1978:1):

> . . . to facilitate and encourage "disadvantaged and disabled" persons to undertake training programs which will enable them to enter or re-enter the labour force . . . .

Even when AVT goals mention upgrading they do so with a firm vocational orientation (Ibid., p. 3):

1) To assist disadvantaged and disabled adults to enter the work force;
2) To make the under-employed more employable by means of skill training courses;
3) To facilitate provision of employment-oriented training and academic upgrading in short-term courses for eligible individuals;
4) To mount short-term programs to meet the manpower needs of government and industry (normally, programs are not to exceed fifty-two weeks in duration);
5) To provide financial support to individuals or organizations for the development of short-term vocational training programs.

Canada Employment and Immigration's regulations are equally specific (CEIC, 1977):

> [The student is to be provided with] . . . training that will, in the opinion of the manpower officer, . . . increase his earning capacity or his opportunities for employment.

This orientation was reiterated in the new National Training Act proposals (Minister, Employment and Immigration, 1982):

> Employment and Immigration Minister Lloyd Axworthy today outlined federal government proposals for a new National Training Program, designed to overcome

> skill shortages, accelerate economic growth and development, and facilitate industrial adjustment.
>
> "The economic growth expected this decade presents us with tremendous challenge and opportunity," said Mr. Axworthy. "We will meet that challenge by replacing the fifteen-year-old Adult Occupational Training Act with new legislation to meet the skill needs of the 80s and, at the same time, improve employment prospects for many Canadians."

The institution has not always rigorously applied these criteria in the past, with the result that CEIC's institutional share of sponsored students had declined from fifty-eight percent in 1972 to the thirty percent shown in Table 6, while AVT has increased its involvement in training steadily in that time (Layton, 1976; Fahy, 1978). The institution's mission statement reflects its view of its broad mandate (1982e):

> To ensure that a comprehensive range of needed quality adult education programs and services is developed and maintained, the Alberta Vocational Centre, Edmonton, will:
>
> > Provide educational, skill training and service initiatives responsive to local, regional and provincial needs.
>
> While maintaining a focus on the training requirements of adults who are educationally, culturally and/or economically disadvantaged, the Alberta Vocational Centre, Edmonton, will endeavor to:
>
> > Provide programs and services designed to enhance the capabilities of Albertans to participate in the social and economic development of the Province.

Problems in Achieving the Institution's Mission

The Problem of Goals

The above mission statement is the result of several years of formal discussions within the institution about the form its services should take and the implications for curricula within programs. An early Institutional Development Plan (Alberta Vocational Centre, 1978:5,30) contained this statement:

> Programs must be responsive to the needs of the community in terms of time, place and type of programs offered.
>
> Programs should be available to parttime students.
>
> Services must be decentralized to the community.

Immediately following this, the institution engaged in a Self-Study, the object of which was "institutional renewal": determining where efforts were needed to bring conditions from where they were to where they ought to be (Small, et. al., 1976). A "Visiting Committee" of educators from other institutions worked with each participating unit of the institution and wrote a report which responded to the unit's own statements. The Visiting Committee report in this case made two comments which reflect the difficulties the institution and its programs were having in addressing its mission: 1) that the institution formulate a statement of philosophy and define its special needs with the (then) Department of Advanced Education and Manpower "as soon as possible"; and 2) that the ABE program pursue its own recommendation that it determine "a common direction for the whole department" (Alberta Vocational Centre, 1979a:26,56,210).

The problem of articulating its goals and moving concertedly to achieve them was still present, reflected a few months later in the agenda of a senior staff retreat in which the following items appeared (Alberta Vocational Centre, 1979b):

-- Planning ("Where is AVC going?")

-- Curriculum/Program development

Thus, while the institution had an ambition to serve its clientele more locally, it was not clear on how this was to be done. It was also self-critical of its planning mechanisms, both at the institutional and program levels.

The Problem of Program Flexibility

By 1980, some steps were taken to clarify goals and move toward addressing them. The key goals appearing at this time were 1) the need to diversify programming to meet the needs of a broader clientele, and 2) the need to individualize programming, to meet varying needs and abilities. The following reflects the ABE program's sentiments (Adult Basic Education, 1980):

> Priorities of Basic Education:
> (Number 2 of 4): To devise programs and delivery mechanisms to serve disadvantaged people not currently reached by present programs and delivery systems.
>
> Specific Goals of Curriculum and Program Development:
> (Number 2 of 3): To individualize and personalize programming to suit wide-ranging learning rates, capacities, interests and styles.

By 1982, the institution had identified this need at several levels. The ABE department submission to the 1982 Annual Report referred in five of its seven paragraphs to the need for more relevant, expeditious curriculum, and "alternate delivery modes"(AVC Edmonton, 1982c). An internal Academic Upgrading Curriculum Review Committee was established in early 1982 to examine curriculum practices and to recommend changes in curriculum development which would, among other things, result in a common format and approach to curriculum development in the whole program in the future. In its "Format" document of May, 1982, the Committee confirmed the need for more flexibility in instructional methods in both the High School and ABE programs (AVC Edmonton, 1982b). An outside consulting firm which evaluated the Academic Upgrading program in the first few months of 1982 reported that thirty-one percent of staff they had interviewed had identified "program flexibility" as a major program need -- the third most frequently cited priority (Evaluation Consultants (Edm.) Ltd, 1982:16).

The fourth reference to the need for greater program flexibility resulted from a retreat of the institution's senior staff in March, 1982, at which the service role of the institution and its programs was the focus of discussion. Several conclusions reached (or reaffirmed) at this retreat bore directly on the form of curriculum and on the manner of delivery of the institution's programs in the future. (In the following the original numbering of the conclusions is preserved (AVC Edmonton, 1982a,unnumbered page):

> 1) Programs should be designed to meet defined needs of the institution's target population as described in the mission statement.
>
> 5) In addition to presenting on-site programs, it should be an institutional priority to serve students who cannot or do not choose to access available Centre programs.
>
> 6) AVC Edmonton should continue to pioneer, develop and maintain high quality curriculum and methodology appropriate to adult learners.
>
> 8) AVC programs should respond, within available resources, to the needs of the community and organizations within the community in terms of place, time and types of programs offered.
>
> 9) AVC programs should be available to both part-time and fulltime students.

A concluding statement, written by the institution's president, posed a challenge to the institution's programs in the form of the following questions (Ibid.):

> AVC's service role is to serve the disadvantaged through the provision of programs and services that will assist them in obtaining and keeping employment. If AVC is a special institution serving the disadvantaged adult then:
>
> 1) What are the special needs of the disadvantaged adult population that we serve?
>
> 2) How are the programs at AVC geared to the specific needs of our students?
>
> 3) What are the programs and services provided by our institution which make us different from other institutions?

The clear imputation of this addition to the retreat report is that AVC must demonstrate in its programs and delivery mechanisms its special character and mission to the disadvantaged. As well, this passage reaffirms that vocational preparation is the proper purpose of the institution's programs, acknowledging the legitimacy of the sponsors' expectations in this regard. Most of all, these questions form a challenge to the Centre's instructional programs to become more distinctively tailored to the unique needs of students with numerous constraints and problems -- "disadvantages" of all sorts.

Prior Attempts to Address the Need for Curriculum Change

Registered Nursing Assistant Program (RNA)

Despite the presence of some fundamental unanswered questions, the institution had made some attempts to increase its programming flexibility. From February 1, 1979, to October 31, 1980, the RNA programs of the Alberta Vocational Centres in Calgary and Edmonton cooperated in an innovative project to "design, develop, implement and evaluate an innovative learning system to prepare Nursing Assistants in Alberta" (AVC Calgary and Edmonton, Vol. 1, 1980:2). The project was made necessary by the legislated requirement to amalgamate the Nursing Assistant and Nursing Orderly training programs in Alberta. The goals of the project were to meet the training needs of students, male and female; to create a portable program; to educate employers about the role of the new graduate RNAs; and to foster the concepts of joint planning, common programming, and collaboration and cooperation between the two institutions (Ibid., p. 3).

The budget for the twenty-one month project exceeded one hundred and thirty thousand dollars, plus substantial contributions of manpower, travel and other funds from the two institutions (Ibid., pp. 78-79). An external Project Director was hired, and the external evaluation was conducted on contract by a consulting firm (Ibid., p. 5). Numerous evaluation instruments and methods were used, including interviews and questionnaires of students, staff, employers, and an advisory committee. In total, then, the project represented an enormous financial and manpower commitment.

The project was conducted in four stages: 1) Reconnaissance (one month), during which the project proposal was written and primary actors met one another; 2) Design and development (seven months), which produced the learning system, the modules and related materials, and the formative evaluation; 3) Implementation (thirteen months), the phasing in of the new program and monitoring of student and staff acceptance; 4) Evaluation, which was ongoing throughout the project, and conducted by external consultants to assure thoroughness (Ibid, pp. 3 - 6).

The general findings of the project were as follows:

1) The program content and processes (modules) were of "high quality and are quite relevant to the preparation of the Nursing Assistant in Alberta."

2) The goal of standardization at the two institutions was achieved.

3) Graduates were meeting the needs and expectations of employers

4) Despite the above, a number of suggestions for improvement were made. (Ibid., Vol. 2, p. iii)

The external evaluators' comments and judgments concerning the eleven specific goals of the project will be discussed here for the light they shed on the problems to be anticipated in a project which has as a major goal the individualization of an entire curriculum. Of the project's eleven goals, three were related to design and development, and eight to implementation. The rating system used in the evaluation used "Yes," "Yes/L" (Limited), and "No" to rank outcomes. The following goals and outcomes are of particular interest (the original numbering of the goals is preserved).

Goal	Rating
5. Orient instruction to learner with teacher managing the system.	Yes/L
5.4 Is individualized instruction viable?	Yes
6. Selectively plan the use of individualized learning methods.	Yes/L
6.3 Are students able to handle the method?	Yes
6.4 Are instructors able to manage the system?	Yes/L
7. Modularize learning.	Yes
8. Cluster modules into discrete nursing levels to allow for flexible entry, exit, and advanced standing.	Yes/L

8.3 Is the administration set up for such flexibility?	Yes/L
8.4 Is the staff prepared for flexibility?	Yes/L
9. Learner self-pacing within the constraints imposed by clinical facilities.	Yes/L
10. Foster self-directedness in learners.	Yes/L
10.1 Does the method foster self-directedness in learners?	Yes/L
10.2 Can a teaching method, in fact, foster self-directedness?	Yes

(*Ibid.*, Vol. 2, pp. 59-61)

Significant are the facts that, while individualization was judged viable, it was achieved only to a limited extent; while students could benefit from and handle individualization, instructors were only able to manage individualization marginally; while content was fully modularized, this resulted in only limited options for flexible entry and exit from the program; that both administration and instructors were judged only partially prepared for this increased flexibility, and that, while a teaching method was thought capable of fostering self-directedness, the one employed here only did so to a limited extent.

The impression is clear that, while the instructional system generally met the needs of employers and satisfied the requirements of the new legislation, it did not in fact produce the innovation of full individualization of the learning system. This was clear, and disappointing, to staff. In fact, when participants responded to a questionnaire on the project their responses were summarized thus by the researchers: "The eight goals of the learning system were generally well achieved, with the exception of self-pacing, self-directedness, and individualizing" (Ibid., Vol. 2, p. 19). This failure is particularly significant in view of the goals of making the program portable and flexible.

A key to the nature of the failure of this program to accommodate desired levels of student self-pacing and self-directed learning might be found in a basic management problem of the RNA program: immense amounts of clerical work related to testing and recordkeeping are done manually. The course consists of ninety modules, each of which consists of a rationale, a terminal objective, learner's objectives, a task analysis (the text of the lesson), and a test (Ibid., p. 55). At the time of the innovative project, students cited problems with testing as second only to problems in organization of the modules (Ibid., p. 40), and ranked the evaluation portion of the course as "least favorable" in a list of six other possible trouble items (Ibid., p. 38). A more recent study (Fahy, 1982) identified continued major hindrances in the testing and recordkeeping system to the achievement of the goals of self-pacing and individualized learning. It appears that the RNA program is the ongoing victim of an unwieldy system of management, and that initial indicators of this problem were visible even in the program's infancy.

A bright spot in the project was the discovery that staff in the RNA program were very interested in learning more about the design process used to produce their new program.

The final report notes that staff wanted ". . . guidelines for instructional staff regarding the learning systems approach. For example, orientation regarding the modularized method of teaching/learning and its inherent methods and procedures" (Ibid., p. 28).

To summarize, the RNA innovative design project was a major instructional revision effort and employed specialists to direct and evaluate it, but it nevertheless failed to achieve some of its most fundamental implementation goals. Especially disappointing was the program's inability to achieve fully its goals of student self-pacing, self-directed learning, and flexible entry and exit, as they affected the program's portability. A likely cause for this failure is the fact that, while it was modularized, the program employed traditional testing and recordkeeping methods, which entail delays in providing results to students, generate great amounts of paper-work, and discourage individual treatment of students. These cumbersome, manual methods of student management also preclude the pursuit of flexibility, as any major variation in the normal "lock-step" movement of students might overwhelm the delicate system which tracks them. In effect, the goal an "innovative learning system" in the RNA program was not achieved, though an innovative development system did result.

Regarding the process of development employed in this project, the goal of faculty involvement to assure commitment to the new program seems to have been met. On a questionnaire sixteen of seventeen staff indicated that collaboration had occurred at least to some extent in the process of the project (Ibid., p. 21). Concerns still expressed had to do with communication, commitment to the program in the future, constraints upon collaborative activities, and the need to allow for differences between the two Centres (Ibid., p. 17).

A major strength of the project is the data it gathered concerning staff acceptance of the curriculum changes instituted. Both interviews and questionnaires were employed, out of which came, in addition to the information noted above, further views of staff about the components of the program, the content, the modules, the strengths and weaknesses, the special needs of the institutions, suggested changes, and requirements to facilitate joint planning (Ibid., pp. 16-17). The ultimate acceptance of the curriculum, in spite of some disappointing shortcomings, must be attributed at least partially to the abundant opportunities permitted to staff for the expression of dissatisfactions and suggestions.

Experiments in Computer-Assisted and Computer-Managed Learning

In September, 1979, the institution undertook an experiment in computer-assisted learning, funded by Program Services Division's Innovative Projects Fund, employing the

PLATO system. The four major research questions and findings are presented in Table 7 (Fahy, 1980):

Table 7: Results of PLATO Project, 1979 - 1980

Question	Finding
1. Do students using PLATO learn as much as students in regular classes at AVC?	Lowest-functioning math students learned more, as measured by the Adult Basic Learning Examination (ABLE). Results in English were ambiguous: the ABLE test showed no difference, while the Tests of Adult Basic Education (TABE) showed gains for PLATO students, no gains for students in regular classes.
2. Do PLATO students learn faster?	Continuing Education (evening) math students moved one-third faster through the basic math course using PLATO. No conclusions were possible in English classes.
3. Do PLATO students accept computer-based learning?	On an attitude questionnaire, students expressed satisfaction. Interviews showed strong interest in further PLATO use. Students routinely spent extra time using PLATO, outside scheduled periods.
4. Do staff and administration accept computer-based learning via PLATO?	Acceptance ranged from enthusiastic to none.

As a result of this project a further Innovative Project was conducted to train instructors as programmers of PLATO, so that programs might be developed locally. This project produced disappointing results, for several reasons related primarily to timing and scheduling of the project, but two student-usable programs were developed nevertheless (Fahy, 1981).

A third Innovative Project was conducted to test the usefulness of the PLATO system in support of the remote delivery of Academic Upgrading programs. In this project a PLATO terminal was located in Hinton, Alberta, at the regional office of the Yellowhead Educational Consortium (Fahy, 1982b). An Instructional Aide was employed parttime to assist students in using the terminal, while testing and placement were performed using PLATO-administered instruments. Major curricula used in the project were PLATO Basic Skills and General Educational Development (GED), though other PLATO courses were made available on a trial basis. Conclusions of the remote project included the recommendation that computer-assisted learning using PLATO be introduced in other small communities in the Yellowhead region, in "learning centres."

As a result of the experiences with computer-based learning several conclusions were reached. First, as predicted by other investigators (Magidson, 1978; Rushinek, 1981), student affective response to computer-assisted learning using PLATO was almost unanimously positive. This effect, though not always accompanied by marked increases in learning rates or achievement (Alderman, 1978), was thought to contribute to the consistently better persistence of students in courses which used PLATO in some form.*

A second finding had to do with staff responses to these projects. Again, as others have found before and after (Gagné, 1974; Alderman, 1978; Milner, 1980; Grossnickle, 1982; Rose, 1982; Kearsley, 1982; Lewin, 1982), staff response to the presence and use of the computer, and to the provision of flexibility in learning, was varied. Some staff were immediately attracted, and became "computer-literate" (even "computer-eloquent") on their own initiative. On the other hand, the "not invented by me" (Robyler, 1982) syndrome afflicted others. Still others had attitudes toward learning and teaching which Rose (1982) calls "impediments" to the use of any technology -- and, it can surely be added, to any change:

> . . . teaching is a solo activity, [and the teacher's role is to] manage and direct the learning situations as completely as possible. In relation, most educators feel that deciding what will go into a course and enacting that plan is a personal and individual challenge. One aspect of this is personal, one-to-one interaction with students, which provides ego satisfaction from student attention and constant, immediate feedback about one's teaching efforts. Educators who prefer privacy in teaching and 'hands-on' involvement hesitate to use the new technologies. To them, this is not 'teaching' because they cannot

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*Schalock (1976) notes that the provision of self-pacing may be the element which accounts for many treatment effects in educational innovations. Zimmerman (1972) distinguishes elements which are "modal" from those which are "elemental." It may be that self-pacing is the elemental component of successful computer-assisted instruction innovations, while the computer itself is largely modal. Some "computer-phobic" staff seemed to draw comfort from the distinction.

> see, feel, or know intuitively what happens to learners in other locations. (p. 14)

In sum, these experiences with computer-assisted instruction generally (experiments with microcomputers were also going on, on a much smaller scale), and with PLATO in particular, helped to clarify the uses of the computer, and the problems of its acceptance. Specifically, these conclusions were reached, and were influential in the early stages of the conception and design of the present study:

1) Students found PLATO motivating and interesting, qualities which might be used to increase motivation and interest in otherwise unpopular subject matter.

2) PLATO was proven adaptable. Features such as PLATO Learning Management (PLM) provided a flexible means of using the computer by instructors who had no special computer training.

3) Where staff resistance was encountered, it was often overcome by arranging actual experience with the innovation. This was especially so for instructors whose reluctance was due to lack of knowledge, or to low-grade "computer-phobia."

Evaluation of the High School and ABE Programs

In late 1981, Evaluation Consultants (Edmonton) Ltd.* was engaged by the institution to review operations in the Adult Basic Education and High School programs, and to attempt to identify needed changes. The reason for the evaluation was the suggestion that instruction in the institution, and in these programs particularly, was suffering because of a change, in 1980, from a twenty-week semester to a ten-week quarter term system. As the research technique employed in the evaluation included questionnaires and interviews, and involved students and staff, a number of other issues arose as well.

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*The resulting report is called "The McKay Study" hereafter.

The findings of that study pertinent to this one include the following. First, fifty-four percent of staff interviewed mentioned "clarify goals and objectives" as a source of needed change (Evaluation Consultants (Edm.) Ltd., 1982:13). As has been shown, this was a concern four years earlier. Second, the researchers concluded that administrative support for program change and renewal was present, as were high levels of staff competence and morale, and satisfactory levels of support services. Finally, two curriculum and instruction concerns were identified, as follows: 1) the ten week instruction term was not being used efficiently, as it was often interrupted by schedule changes and other intrusions which affected student-instructor interaction; and 2) program development was not adequate.

Schalock (1976:45) describes the process of "instructional development" as consisting of eight elements:

1) Administrative commitment;
2) An instructional development agency reporting to the president;

3) Rewards for good teaching;

4) An instructional development procedure to facilitate development and communication;

5) A team approach to actual development;

6) Instructor involvement in development, to enhance skills in this area;

7) Clear priorities for development projects;

8) Conscientious evaluation.

The evaluation study, described above, seemed to show administrative support for change, but deficient understanding of priorities and goals. In the present study it was a goal to produce communication and coordination, development procedures, staff skills, and evaluation mechanisms. In this way an attempt was made in this study to address deficiencies in the curriculum life of the Academic Upgrading program, using indicators from the evaluation about present organizational "health," and the climate for such changes as were planned. The evaluation study was thus an initial assessment of what was at the commencement of the study.

The Curriculum Committee

During the evaluation study it had become evident that some attention should be directed to the problem of a more uniform approach to curriculum development in the Academic Upgrading program. A committee was formed to study this question, which produced, in May, 1982, a "format for curriculum development at AVC" (AVC Edmonton, 1982b).

Among other recommendations about curriculum, the committee came to the conclusion that "flexibility" in instructional methods was needed.

During the present study, the Curriculum Committee "Format" document was the basis for curriculum planning in the Academic Upgrading program. There was no difficulty for this study in adhering to it, as the recommended format reflects the "balanced-coordinated" curriculum design strategy discussed in chapter 2. For other curriculum developers in the department, however, the experience of following a specific curriculum development format was unique, and provided for the first time a common vocabulary and syntax for curriculum creation.

Summary and Implications for the Present Study

The following institutional facts indicated support for this study of curriculum opinions and practices:

1) The institution's goals of meeting the needs of its disadvantaged adult clientele in flexible and innovative ways were, over the previous several years, admittedly unsuccessful. Inflexibility of the curriculum was cited as the cause of this failure.

2) Vocational preparation, though not expected of all students, was clearly a major goal of most sponsored students (and was certainly an expectation of their sponsors). The legitimacy and primacy of this goal was acknowledged in institutional publications, clarifying program -- and curriculum --

goals.

3) Experiences such as the Registered Nursing Assistant Innovative Project in curriculum redesign showed: a) that a major curriculum change project could be coordinated, with minimal negative effects on the program and morale of participants, if the process was skillfully managed; b) but that, despite successful management of the development process and ample resources for implementation, if traditional/conventional instructional approaches were continued the redesigned curriculum might fail to achieve major goals such as increased student self-pacing, self-direction, and individualization, after all.

4) Experience with computer-based learning, chiefly with the PLATO computer-based learning system, produced evidence that: a) students throughout the institution accept the medium and find it motivating; b) the PLATO system itself is adaptable, providing both computer-assisted and computer-managed learning (CAL and CML); and c) staff experience with the medium lowers resistance generally, and markedly increases the enthusiasm of actual users.

5) A recent review of the functioning of the Academic Upgrading program revealed strengths such as a highly competent staff and an administration supportive of needed changes, despite some lack of program goal clarity.

Chapter Summary

The institution in which the study was conducted had identified the ambitious mission of providing a comprehensive range of educational services both on- and off-site, to a markedly varied adult clientele. It had reiterated its commitment to serving the "disadvantaged," a commitment which was clearly construed as "vocational preparation" by the major federal and provincial sponsors of its students.

Problems related to production and delivery of this comprehensive range of educational programs and services included two significant ones: 1) suspicion that the institution's stated goals and general philosophy might not in fact be shared and supported by the Department of Advanced Education and Manpower, or, even, by all staff within the institution itself; and 2) lack of delivery mechanisms capable of making programs flexibly available. Recommendations were made at several levels that the institution acquire and verify with Advanced Education and Manpower, and within its own walls, its long-term plans and goals.

Just prior to the commencement of the present study a number of planning principles were in place. Three of these principles stated in part that:

1) Programs should be designed to meet the known needs of the institution's clientele;

2) Programs should be available to those who would not or could not become fulltime, on-site students;

3) Programs should feature experimentation, in order to pioneer new programs and delivery methods.

The study was thus begun at a time when the institution was officially committed to action toward program change and toward greater delivery versatility. It was also a time when the senior management of the institution was publicly questioning how present programming was meeting the special needs of existing students. Implicit in the question was the position that unique student needs should be met with unique programs, and special instructional materials and delivery mechanisms. This position was a challenge to the institution's programs, and was taken up by a large committee which chose to produce a document on the format of curriculum development as its first reply. There was, at that time, no other information about how well prepared, or well disposed, program staff were to further address the challenge.

Chapter 5

CURRICULUM NEEDS, PRIORITIES AND ACHIEVEMENTS

Introduction

In this chapter the major findings of the study are presented related to the first research question: What are the views of instructors and administrators in an adult education program regarding curriculum needs, priorities and achievements?

Data for addressing the first research question were obtained from initial and final staff interviews and, to a lesser extent, from the questionnaire results. (See page 112, below, for the interview questions, and Appendix A and B for a copy of the initial and final questionnaires.) The interviews were conducted and the questionnaires administered at both the beginning and end of the study to determine which staff opinions regarding curriculum were relatively unchanging and which had been altered during the year. As noted earlier, the overall intention was to explore with staff, as "co-researchers," the state of perceived present curriculum health within the Academic Upgrading program's ABE department, and to assess hopes for future curriculum renewal.

Before describing the interview findings a synopsis of the study is presented.

Synposis of the Study

The institutional events and publications discussed in the previous chapter formed the background to the study. Findings of the evaluation of the Academic Upgrading program (the McKay study) and the conclusions and recommendations of Academic Upgrading's Curriculum Committee were well known in both the ABE and High School departments. Somewhat less immediate but still influential on curriculum thought were the institution's published position on the need for greater program flexibility (see chapter 4, and "Curriculum needs and priorities," below). Also subjects of debate were the implications of experiences with computer-assisted and computer-managed instruction in various PLATO projects, and the curriculum revision project in the Registered Nursing Assistant program.

While there was much information and opinion, there was at this time no systematic assessment of staff opinions of the various suggestions or plans then circulating through the institution. The first research question was posed in order to address this lack of information about staff opinions of various institutional plans and priorities.

The second research question was developed when, in the process of initially surveying institutional publications and informally assessing opinions of staff, it became clear that some learning theories and philosophies of adult education were often poorly defined or were actually misrepresented in varying degrees within the institution. It appeared, for example, that a term such as "individualized instruction" was often defined as "isolated instruction," as found in a correspondence course experience; that "learning modules" were equated with "programmed instruction"; and that "mastery learning" was sometimes thought to entail abolition of timetables and other scheduling devices, and reduction of the instructor to the role of mark keeper. The second research question was posed to attempt to organize findings on how accurately various curriculum-related terms and concepts were understood by staff, and how much correspondence existed between staff and "experts" on adult learning needs and preferences.

Finally, because curriculum development is an ongoing activity in the institution, proceeding in the High School and ABE departments of Academic Upgrading during the study, the decision was made to offer coordination for some development projects. The researcher identified from interview and questionnaire findings those individuals who had expressed interest in participating in curriculum revision projects. These staff were the first to become aware of, interested in, informed about, and involved with curriculum innovations, and were thus regarded as "innovators" or "early adopters" (Rogers, 1962), whose influence within the departments would be great on their colleagues' thinking. The researcher offered to work with these instructors individually in defining and accomplishing a curriculum revision project, with the understanding that certain principles of adult learning (andragogy and the mastery learning model) and of curriculum design (a systematic "balanced-coordinated/open adaptation strategy") would be consultatively applied. The third research question asks how effective the resulting relationship was, from the participating instructors' points of view.

Research Question #1: Curriculum Needs, Priorities and Achievements

The Interview Procedure*

In order to establish an initial understanding of the climate for change in the ABE department of the Academic Upgrading program interviews were conducted in September and October, 1982, with all ABE math instructors (n = 7), the Senior Instructors and Program Heads of both departments (n = 6; hereafter, these are referred to as "administrators"), and the institution's president, vice-president, and Academic Division Director (hereafter called "managers"). The interviews were conducted individually and privately with each individual. Notes were kept by the researcher, and a typed point-form summary of the notes was supplied to the interviewee afterward for correction or revision. A second interview was required in about half the cases because time was inadequate to complete the interview in the one hour initially set aside for it.

The interview consisted of the following four questions, and a list of terms on which the interviewee commented.

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*See Appendix S for the interview analysis procedure.

1) What are the highest curriculum priorities in the area in which you teach/administer?

2) How well are these priorities being met?

3) What role do you see for yourself in addressing curriculum priorities?

4) What resources (personal or institutional) do you require to address the priorities?

5) Please comment on the following:

-- Curriculum development as presently done here;
-- Computer-based learning
-- Individualized instruction
-- Modularized curriculum
-- Mastery learning
-- Alternative delivery of instruction
-- The learning needs of A.V.C.'s students

While all interviewees were asked to comment on the ABE department's needs with respect to the above, they often noted that their comments applied to all of Academic Upgrading, or the institution as a whole.

Curriculum Priorities, Needs, and Achievements

Areas of Agreement. All parties expressed concern that courses be functional, and that students leaving upgrading have "mastery" of the academic and interpersonal skills required in further training or employment. Related to this concern is interest in revising or producing materials with a unique orientation to the students' needs.

Management and administration extended this concern to a general regard for the "adult" nature of course offerings and teaching methods. Both mentioned the need for a model of the adult learner upon which curriculum might be based, and against which methods might be evaluated. Senior staff tend to see a responsibility on the part of the institution to respect the limitations and constraints under which students often seem to labor by adjusting institutional expectations and demands not essential to learning. Managers and administrators mentioned the need for "commonality" in several areas: methods, philosophy, curriculum development strategy, use of instructional resources, and, in some areas, minimum competency standards. Their interest in innovation in use of staff, professional development, time, location of courses, and delivery modes is also in line with this concern for the limitations students face in returning to school as adults.

Differences of Opinion. Despite common interests, there are concerns which were not mentioned in the interviews by all three groups. Instructors alone mentioned the constraints of the ten-week instructional term, citing this as a limitation on the amount students are able to master of a course. Their suggestion that the term be lengthened, and that classes be more homogeneous, indicates an orientation to their role as instructors in the learning process, and a conviction that students do not learn unless an instructor is teaching them. (Some findings of the McKay study indicated that this might have been a minority opinion, but it is far from vanishing and indicates a feeling that instructional opportunities have become fewer while demands on students have risen even higher.

Instructors were also the only group to address the form which professional development ought to take. They feel that workshops and short-term development efforts are preferable to long-term ones (such as university courses). In this regard they are exhibiting characteristics predicted by Rogers (1962): they are less interested in information than they are in experiencing curriculum principles put into practice, as they would be in a "localite" activity such as a workshop on-site. (The questionnaire results support this preference; see items 16 and 28.)

Supervisory staff tend to emphasize the pressure they feel personally, and the difficulties the lack of time causes them in conscientiously doing their duties in supervising various aspects of the program. They are particularly critical of the paperwork load, much of which they feel is the result of the change to ten-week terms. Because they are absorbed in administrative detail they are often unable to assure that curriculum is well-planned, that its results are evaluated thoroughly, and that the benefits of curriculum development activity are generally exploited in the program. (Instructors' opinions in the questionnaire (item 23) show agreement with this assessment.)

Administrative staff were also sensitive to the problems of students who are promoted without sufficient mastery of prerequisite skills. The complaint about the reading levels of math students, and the impact these low levels have on students' problem solving abilities, are examples.

Managers, as would be expected, have the broadest purview, and the most general perspective. Their sole concerns include convincing the Department of Advanced Education of the institution's emerging curriculum needs, and in assuring transferability of credit and learning. They worry also about institutional resources such as the proposed Learning Resource Centre, and the Continuing Education division. Management tends to regard information and precise evaluation as high priorities. They seem to be unwilling to act upon their own and their subordinates' opinions. Instructors and administrators, on the other hand, tend to believe they know what changes are needed, and so are quite willing to act upon their basically unsubstantiated opinions.

Overall, quality of learning, the fate of upgrading graduates, the ability of students to function in the "real world" after upgrading, and ways of producing improvements in programs and courses are common concerns. Different conclusions about these concerns were reached by the three groups, however. Instructors tend to see the quality of learning as a direct result of the time they can spend with their classes.

Management and administration tended to see greater programing efficiency and variety, and better provision for the individual needs of students, as ways of increasing quality. Instructors point to the inadequacy of existing materials and the lack of time to upgrade them. Management and administration include methods and delivery modes generally in their concerns about how to better meet learning needs.

Management professed dependence upon the increasing expertise of instructional staff for many hoped-for changes. Instructors do not see their own expertise as an issue, except in the narrow area termed "computer literacy." Between these two groups, supervisory staff complained that they are presently unable to adequately supervise the maintenance of the curriculum. They do not believe any substantial change can occur while they were mired in paperwork of dubious importance. Overall, the three groups regard the problem of professional development differently. They also see different outcomes from professional development efforts.

Management and administration believe that more flexible instruction and more regard for the individual needs of students, both in traditional and new venues, should result from curriculum redesign. Instructors feel that future curriculum revision should be intended to make materials more appropriate, to adjust delivery to constraints -- that is, to provide better tools for doing the present job more efficiently.

They do not appear to believe that major changes are needed nor that they will be forthcoming from the various activities planned for their benefit.

Evaluation of How Well Priorities Were Being Met

Both instructors and managers look to program administrators to set priorities and establish the tempo and tenor of change in the program. Managers stated they would assist by attempting to secure resources after the ground work had been done and the case for change documented. Instructors admitted that their expectations for change, and for evaluation and planning of curriculum, are colored by their awareness that program administrators are harried by the demands of their daily duties. The administrators themselves, seeming to recognize the expectations held on both sides, simply pointed out that in order to take a more active role in curriculum they would have to stop doing something else. They made it clear they felt this is possible, citing clerical duties and routine paperwork as present monopolizers of their time and energies.

It seems clear that administrators are faced with several competing demands on their personal resources, and that they choose (or are forced) to focus on maintenance duties such as preregistration of students, course changes, and various documentation protocols required by the Student

Information System. Given that they are fully engaged by their present duties, and in view of the substantial expectations of both managers and instructors, some adjustment either of the duties or of the expectations seems to be required.

Roles of Staff

The roles of management, administration, and instructional staff are clearly distinct. Management is concerned with system efficiency, focusing on goals, resources, evaluation of product outcomes, and planning for future needs. Instructors wish to teach and to do some form of curriculum development, but the latter with better planning and evaluation. They feel capable, without much outside assistance, of doing the job.

In this situation, administrative staff are again faced with large expectations on both sides. They distinguished administrative duties from those related to curriculum supervision, and admitted the latter had been impossible to address adequately. As in the earlier situation where conflicting demands were made on these staff, administrators unhappily chose to maintain the present operation and to neglect those longer-range, change related responsibilities. This is a major source of discontent and stress for administrative staff.

Resources

Management theorized that lack of goal clarity may have affected instructional staff in different ways, including a perception of too little time or the lack of some other resource. They feel clarification of goals should be a priority for management. Certainly instructors would agree with this priority, indicating in both the interviews and the questionnaire that a serious lack of direction is damaging planning and making curriculum development very inefficient.

The administrative group cited the need for new job descriptions to assist them personally, and thence for support in guiding the change process within the program. Time and funds were mentioned as well but, as was hinted by management, these may have been misinterpretations of needs for other resources.

All groups agree that basic teaching tools are amply supplied, and that instruction does not suffer from a lack of the basic resources.

Curriculum Development and Change

All parties expressed concern with the lack of a coherent institutional curriculum development and change process. Administrative staff cited their own inability to supervise the process, caused by their heavy administrative loads, as a major impediment to improvement. Instructors blamed the lack of a curriculum development system, and a budget system which would provide advance planning and regularity in curriculum development. Some also admitted their lack of preparation to do this job well. Management felt that change would occur most successfully if the case for it had been carefully documented in advance by research and evaluation data.

Undoubtedly, all three groups are correct to some extent. If so, the problem of curriculum change and redirection does include each of these elements: lack of adequate planning, including budget; lack of adequate instructor expertise; lack of time for close supervision; lack of careful evaluation; and lack of data to support long-range planning.

Computer-Based Learning

Instructors and administrators expressed the belief that computer-based learning (CBL) would not replace classroom instruction, only supplement it. Several assumed shortcomings of CBL were mentioned, many associated with students' suspected inability to manage the reading demands of the medium. At the same time there was strong support for some kind of an ongoing program of computer literacy for staff, and for immediate use of the institution's microcomputers in some capacity with students, both to demonstrate the hardware's usefulness and to begin realizing some return from the investment they represented.

Management was less uncertain about CBL, citing possible applications on- and off-site as an option for all students in some form. They acknowledge that curriculum redesign might have to accompany integration of computers in the program, but they seem to feel (perhaps erroneously, given the questionnaire results) that some programs are closer to making the transition to computer use than others.

The picture which emerges from the interviews shows considerable reservations regarding CBL on the part of administrators and instructors. (Adult Basic Education instructors are more positive than their colleagues, as indicated by items 29 to 38 on the questionnaire.) Management is positive about the potential of CBL. All parties identified the need for change in curriculum and, to different degrees, to the philosophy of instruction. All also want to see small-scale demonstration projects performed immediately, to begin testing the potential of the medium.

Individualized Instruction

This concept was variously defined, and was received with widely varying degrees of enthusiasm. Management felt the term refers to instruction geared to students' capacities to learn, without prejudice as to methods or formats of instruction. Instructors and administrators seemed to equate individualized instruction with independent instruction, in which students are kept separated from the instructor and from one another. Some instructors, using this definition, pointed out that students frequently lack the study skills to say nothing of maturity and self-discipline, to maintain effective study schedules without instructor guidance. They also feel the classroom provides important social and interpersonal lessons which they assume would not be available to students in individualized instruction.

Administrative staff recognize several positive features of individualized instruction, while repeating some of the reservations expressed by instructors. Among the potential advantages are the ability of individualized instruction to adapt to exigencies of students' lives, and to avoid the excessive stress caused by the inflexible demands of an external schedule. Reservations include the complexity entailed by the advance planning required, the demands placed on staff in managing students working at different paces and levels, students' deficient study skills, and concern about the actual levels of learning students achieve.

Overall, those closest to the classroom voiced the greatest reservations about individualized instruction, though on the questionnaire this concept was very positively received by ABE staff (see items 1 to 7). The problem of a lack of a common definition of the term is obvious here.

Modularized Curriculum

There is no common definition of this term. Managers viewed modules simply as learning resources in units which would most facilitate learning. Administrators also held this definition, and expressed interest in putting more of the instructional program into this form. Some instructors, however, were influenced by what they perceived as inappropriate uses of modules in other programs in the institution, where it was allegedly the practice to require all students to complete all the modules at essentially the same time. This implementation was regarded as inflexible, and of no advantage to students. Nevertheless, some instructors did acknowledge that modules could be helpful to certain students as an option, and that modules would be more portable for Continuing Education and other parttime student use.

As with individualized instruction the obvious conclusion is that some common definition of this term is needed. At the same time it is clear that many staff do accept the usefulness of instructional modules, and would appreciate their availability.

Mastery Learning

Once more, the definitions applied by different groups to this term resulted in various judgments. Management viewed mastery learning conditions as essential to some courses, while administrators and instructors wondered if criterion levels would be too high or too low, resulting in students never passing or always passing them. In the latter view, criterion levels are apparently thought to be inflexible and externally established, a view far from Bloom's (1976) definition discussed in chapter 2.

Despite reservations it was agreed that some elements of the mastery model were already employed in some parts of the program, in the establishment of criterion levels for promotion from various courses. (This practice is, in fact, more the establishment of prerequisites than it is a form of mastery learning; this is further evidence of the confusion surrounding the term.)

Alternative Delivery Modes

Here, administrators and instructors repeated their conviction that the main vehicle for instruction should continue to be classroom-based, group instruction, paced and directed by the instructor. Having made this point they did agree that some students might benefit from the availability of alternatives, such as the Learning Resource Centre. Management does not share the view that any single instructional mode is primary. Instead, all possible modes are viewed as options, with students selecting (or being placed in) the most appropriate option for their situation. (This was apparently the view of instructors on the questionnaire (item 8), where no single mode of instruction was judged suitable for all students.)

Characteristics of Students

The major problems found among students were clearly understood by all groups, and led to some pertinent suggestions for changes in instructional practices and policies. Management noted that the institution's students are, in several respects, unique in the Province's postsecondary system, and that consequently there is a need for the institution to discover and test innovative curricula and instructional methods. While ABE instructors did not dwell on this point in the interviews their response to the questionnaire items related to the need for curriculum development certainly indicated agreement (see items 8, 9, 12, 16, 45, and 54). Management further felt that this need is acknowledged by the Department of Advanced Education, and would be reflected in special funding for curriculum development in the future.

The Final Staff Interviews

Introduction

In May and June, 1983, a second interview was conducted with the eight instructors and administrators from the ABE department who participated in the original interviews. These staff were reinterviewed because the major curriculum revision project, the MFDO project, had been completed in the ABE department. As in the initial interview, notes were supplied by the researcher who made summaries of comments in the second interview, typed them, and returned them to the interviewee for verification. (Minor changes were made by two of the eight interviewees.)

Findings

Curriculum Priorities and Achievements. In the original interviews, concerns had been expressed about the effects on students of the rate of instruction, the adequacy of materials (and the lack of time to revise them), the absence of skill training or other employment options for non-academic students, and professional development. In the second interviews five of the eight staff said they had no changes to their original thoughts. Having said this, they often elaborated on their views so that, in each of the following sections, views of those with "no changes" are included with those of staff who did identify changes in their views.

The major curriculum concern expressed in the second interviews was for students who were not benefitting from their courses. Comments such as, "We shouldn't blame the students," and "A lot of it is just too academic" were heard. There were also charges that course content is not clear, and that the program's basic philosophy is not yet articulated well enough.

Priorities include incorporation of more "functional" content into the curriculum, to provide more "real world" contact. There is also interest in focusing more on student learning, and less on the implications of learning such as career goals. One instructor argued that prerequisites which were now restrictive should be seen more as suggestive, and students given opportunities to "challenge" courses they might otherwise be judged inadequately prepared for.

Regarding reading abilities and their effects on student achievement, some sentiments were expressed that reading comprehension is presently given too much emphasis in decisions about students' futures. The fact that one AVC skill training course, Building Service Worker, is able to train marginally literate students was cited as evidence that reading need not be central to further training. (In this connection, Bloom (1976:50) notes that reading in present educational practice is a "generalized cognitive entry behavior" which "enables students to learn the subject in spite of variation in the quality of instruction." Reading skills might well be less needed as this sort of "safety net," if the quality of instruction were subject to less variation.)

A number of individuals mentioned they felt advances had been made over the year. They cited plans for an ABE "on-site outreach" (an experiment in individualized, student-paced learning for students not able or willing to enter regular fulltime programs) and the several staff exchanges between the ABE and High School programs as examples. The discussions of program philosophy which had recently taken place were also mentioned favorably.

Preferred Roles in Curriculum Development. All eight interviewees said their views on this question were unchanged. In the initial interviews most instructors had indicated they felt capable of doing curriculum development, and wished to continue to have curriculum development opportunities, but preferred to work in development teams. They also felt most comfortable when the products of curriculum development were regarded as suggestions or resources, and not mandated for use. In the second interviews the term "maintenance" was used by one person to denote curriculum activity of a minor nature. She felt much of this is needed, on an ongoing basis, and that all instructors could at least be permitted this much curriculum responsibility.

Another instructor noted that curriculum development is different from discussions of curriculum philosophy. She expressed her personal preference for the former, and aversion to the latter.

Resources. Two instructors said their views had changed on this question. One change was related to the potential role of the Learning Resource Centre (LRC), which the instructor now felt could provide for a student's whole program, whereas before he had thought of the LRC only as a supplement to regular classroom instruction. The second comment was that it would be useful to developers to have a steady source of information on the results of their work. "Follow-up" and "feedback" are regarded as vital to improving the development process.

Other comments regarding resources repeated views heard in the initial interviews: basic instructional resources are quite adequate; more time for curriculum development is needed for serious curriculum change; audio-visual equipment needs better organization. Other, somewhat differing comments were also recorded: most curriculum development could be done in available time, without released time, and sympathy from management would be helpful to the morale of those working on curriculum.

Overall, instructors do not find any single resource insufficient to good instruction. If more time were available, some thought, important changes, currently impossible, could be made to the development process. Others disputed this contention, arguing that without clear direction for change the additional resources might simply be consumed.

Future Curriculum Involvement. In the initial interviews staff had been asked if they would be interested in participating in a curriculum development pilot project. In the second interviews participants were asked what they thought their future curriculum involvement would be. Two instructors mentioned they hoped to be involved in the planned "on-site outreach," and one said she hoped to develop materials for the Whole Numbers course more suited to the students' low reading levels. Two mentioned their hope that the former "homeroom" concept (a classroom where the schedule was more flexible, with one set of instructors responsible for all subjects taught to a group of students) might be revived, and they might contribute to its development. Another instructor cited the need for greater functional content in courses generally. Though she had no specific projects in mind, she felt she would be involved with making some parts of the program more functional. Finally, two individuals simply said "Yes," they would like to be involved in future curriculum development activities.

Overall, consistent with the initial questionnaire findings, these instructors expressed unanimous interest in further curriculum development activity. The depth of thought given to proposals varied considerably, however. It appears that all instructors feel curriculum development is their responsibility as instructors, and all do some form of materials development or revision routinely, but only a minority actively and spontaneously develop different approaches to curriculum presentation.

Curriculum Development and Change in the Institution. Instructors had been critical of the change process in the initial interviews, particularly the planning and evaluation phases. They maintained this position in the final interviews, with only one person stating a change in his views. The basic complaint continued to be that the development process is too unsystematic (though one instructor defended it as working fairly well, despite this weakness), and too often "reactive." The feeling of always trying to "catch up" to needs for change was voiced. There continued to be sentiment in the final interviews that instructors were quite capable of, and should be permitted to do, most curriculum development.

Computers. Three interviewees admitted to changes in their thinking on this question. In the initial interviews misgivings were rife among instructors, chiefly to do with their lack of understanding of their role in computer-based education (CBE), of the institution's short- and long-term goals, and of the technology itself. The final questionnaire showed some relaxation of these fears, as did the interviews.

Some fears regarding computers and their use had been alleviated by a combination of increased experience and greater understanding. Three instructors said they were now definitely interested in exploring computer use in their courses. Another noted he was taking a typing course to prepare to use the computer. Others felt they could now see some applications of computers as a supplement in their courses. (No one advised computer use as a major instructional delivery mode.)

Some reservations persisted. One instructor felt that students at low academic levels could not use computers because of their low reading abilities. Another noted her lack of computer literacy still prevented her from considering computers positively, and she criticized the institution for failing to provide her with convenient training. Several individuals noted that the precise use of the computer was still to be determined by, they trusted, carefully evaluated study.

In summary, instructors showed less resistance to the concept of CBE in the second interviews, though they still expressed some reservations and they clearly wished to see the computer relegated, for the most part, to a minor, supporting role. Some responses indicate that certain staff may not as yet have been reached by efforts to familiarize them with the technology, and that either more flexible inservices should be devised or more onus should be clearly placed on the individuals themselves for gaining this background.

Individualized Instruction. This topic had been soundly supported in the initial and final questionnaires, but produced negative comments in the interviews. In the initial interviews there had been considerable evidence that the term was widely confused, and mistaken for such things as programmed instruction and learning by correspondence. In order to address this problem, instructors engaged in the pilot projects were given Hodgkinson's (1975) views: "Individualized learning means working individual student differences into the learning process rather than ignoring them" (*Ibid*., pp. 83 - 84). Also:

> We usually think that the term individualized program is simply a single student working alone. But one on one is not enough -- you can have an individual learning program with ten or fifteen students in a group all doing pretty much the same thing in a collabosative way, as long as each student has the right of decision. The focus needs to be on the students' *decision to want to learn, what to learn, and how to learn it*. (Emphasis Hodgkinson's)

In the second interviews two instructors admitted to changes in thinking, and several comments were recorded which indicated some common understanding may have developed regarding the term. Two people noted they found individualization appealing, *if* some limit on time allowed students to complete elements of instruction were imposed. Two others felt individualized instruction might be a viable option for some students not well served in the regular program.

Reservations were expressed by one instructor who felt students would need to be highly motivated to succeed in individualized instruction. In his experience few typical ABE students would successfully manage individualization. Two others felt the term was still not sufficiently clear, and that some guidance from management would be needed to clarify its meaning and importance for the institution.

Overall, individualization seems still to be regarded as a desirable curriculum goal, with some lingering reservations. Some questions about the concept's implications seem to have been addressed, and initial and final interview and questionnaire data both show consistent belief by a majority of staff that individualization would be valuable to students. Other findings indicate persistent reluctance to giving too much independence in learning to students, or to providing too much for different learning needs, because "life isn't like that." There is also some feeling that, as a learning option, individualization would be more valuable to better motivated students than are usually found in the ABE program.

Modularized Curriculum. Little change was noted regarding this term. In the initial interviews support was found for modules as a sensible way to package learning materials, and as a resource for students not well served by the regular program. Here, only one instructor changed his views, and that was to recognize the value of modules for helping the instructor to organize the curriculum better.

Among reservations still found are the fear that modules might be used inflexibly, that is, that they would be seen as "the course," and all students required to do all parts of all modules, in a fixed sequence. There is also a conviction that poorer students might find modules less useful, or, conversely, might need more instructor assistance to use them successfully. One instructor admonished that, whatever is done in the way of developing modules, they should not be prescribed alone to students but should only accompany regular classroom activity and instructor monitoring.

Mastery Learning. In the initial interviews instructors expressed their greatest reservations with the concept of flexible time for learning. They felt that time could not be made infinitely flexible (which was never suggested, and shows the degree of information existing regarding the term.) Some also felt it would give students a false sense of their capabilities if they succeeded under mastery conditions when these would not be available later. Others noted that some mastery conditions were employed in the program, chiefly in the setting of mastery criteria for promotion from courses.

In the second interviews one person changed his views, acknowledging mastery learning conditions might benefit some students. There continued to be reservations or, more accurately, conditions for acceptance of the concept, however*:

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*It is noteworthy that Bloom's (1976:4) definition of mastery learning was well-received by all instructors, who saw nothing objectionable or controversial in it:

> [Mastery learning] . . . makes use of existing curriculum but seeks teaching procedures and a set of feedback and corrective techniques to assure a high level of learning for a majority of students.

1) time permitted students for mastery must not be unlimited; 2) the content of courses requiring mastery must be clearly distinguished from content not requiring mastery; and 3) the term should be more clearly defined.

Alternative Delivery of Instruction. In the initial interviews, though classroom instruction was seen as the main delivery mode, alternatives were acknowledged as legitimate for some students, and in the second interviews no change of outlook was noted. There continued to be agreement that various alternatives might be useful for some students, that the Learning Resource Centre is a promising example, but that nothing could (or should) replace the classroom learning experience for most students.

Students' Learning Needs and Characteristics. Two instructors felt their views had changed somewhat on students' learning preferences since the fall, largely in that some students were staying in school for whom both they and the students felt employment would be more appropriate occupation. The poor economic outlook discouraged this option, however, and the students stayed on in classes waiting for something to attract them away. Another instructor noted her feeling that some students' financial problems had become more acute, perhaps for the reason that parttime or short-term employment had become harder to find.

A related observation was that, for many students, personal problems should have a higher priority than academic subjects. It was also noted that some efforts were being made to address this fact in cooperation with the High School and Student Services.

A final observation was that more training possibilities for students with limited academic backgrounds would be beneficial, both to morale during upgrading and to successful student employment afterward.

Summary. Few major changes were noted in staff views in the second interviews. Minor changes were detected in regard to some curriculum concepts (individualization, mastery learning), and these usually led to greater acceptance of that concept, but, overall, instructors denied they had changed their thinking substantially.

On the other hand, some responses indicate more receptivity to change in general. Though instructors express reservations about computers some have taken inservices on their use, or are learning about them on their own time. All instructors feel they should be involved in future curriculum development, and several mentioned specifically some of the more innovative programming developments as areas of personal interest. There is also greater acceptance of the usefulness of some curriculum innovations as "options" or "supplements" to the regular program.

Summary of Findings Related to Research Question #1: Curriculum Needs, Priorities and Achievements

The following is a summary of the views expressed by managers, teaching administrators, and instructors in the questionnaires and interviews.

1) There is general agreement that curriculum in the institution should be functional*, that is, applicable to further training, further upgrading, employment, or more effective adult participation in society.

2) There is concern that, presently, students do not always develop adequate mastery of basic skills. This is apparent in low levels of retention and in inability to apply skills in real-life, or problem-solving, situations.

3) Administrators and instructors agree that first-line administrators (Senior Instructors and Program Heads) are unable to provide adequate leadership and supervision of curriculum development activities because of the pressure of other, often clerical, duties. The apparent reliance of management and instructors on this group for active leadership in curriculum development in the future makes this state of affairs a major impediment to renewal.

4) There is dissatisfaction with the lack of systematic planning and articulation of curriculum development activities, and with the uncertainty of budget support for it. Causes of the present problem with curriculum change are

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*Malicky et. al. (1982:2) define a "functional approach" as "the reading and writing needs which adults meet in their everyday lives . . . ."

thought to include lack of appropriate advance planning; lack of clear curriculum goals; lack of instructor expertise in designing instruction for adults; and lack of information on present program effectiveness.

5) All parties expect to see the involvement of computers in some capacity in the instructional program. Opinions about the exact uses and the advance preparations required vary, however, with instructors and administrators very concerned that their role and the institution's expectations be clarified before any large-scale implementation.

6) The following terms suffer from a lack of clear, shared definition: individualized instruction, modularized curriculum, mastery learning, and alternative delivery of instruction. Some instructors feel all of these terms refer to options supplemental to the primary classroom mode of instruction. Widely-varying opinions exist, however, among instructors, and between instructors, administrators, and managers. Given this confusion, it appears use of these terms will not result in clear communication. Examples and definitions must be provided if these terms are to be used in discussion of curriculum with precision at the institution.

7) Instructors and administrators have a low opinion of students' capabilities to function independently in a learning task. Instructors' and administrators' views, for the most part, do not reflect acknowledgement of the "adult" nature of the clientele, or an andragogic orientation to

the teaching/learning situation. At the same time there is genuine appreciation of the learning constraints students experience. There does not seem to be a suspicion that some of the institution's demands might contribute to students' problems in becoming or remaining students.

Chapter 6

STAFF AND EXPERT OPINION ON ADULT EDUCATION

Introduction

In this chapter the major findings of the study related to the second research question are presented: How do the views of staff regarding various concepts related to curriculum development compare with the advice of some adult education experts regarding good curriculum and instructional practice in adult education generally, and adult basic education in particular?

Procedure

An initial fifty-five item questionnaire was developed and administered to Academic Upgrading (ABE and High School), and Registered Nursing Assistant (RNA) instructors only, in October and November, 1982, after sufficient interviews had been completed to indicate curriculum concepts and terms on which there were varying meanings and differences of opinion. (As explained in chapter 3, Academic Upgrading staff were chosen because of curriculum changes planned for that program; RNA staff were included because of the recent history of curriculum development in that program.) From the results of the initial questionnaire a second questionnaire was developed and administered to the same staff in May and June, 1983.

The second questionnaire (called the final questionaire hereafter) consisted of the ten items from the initial questionnaire on which all three staff groups agreed most strongly, and the ten statements with which they disagreed most strongly.

Between administrations of the two questionnaires a Questionnaire Analysis Panel of four experienced Academic Upgrading staff (two from the ABE department and two from High School) was convened to discuss those results of the initial questionnaire which were puzzling, inconclusive, apparently contradictory, or otherwise problematic. (See Appendix C for items considered by the Questionnaire Analysis Panel.)

The initial questionnaire consisted of six sub-sections (the number of items in each sub-section is indicated in parentheses):

Individualized instruction (7)
Alternative delivery modes and teaching methods (10)
Innovation and change (11)
Computers (10)
Students' learning attitudes and preferences (6)
Curriculum development (11)

Table 8 shows the questionnaire return rates for the three instructor groups.

Table 8: Questionnaire Return Rates, Initial Questionnaire

Program	Number of Responses	Total Staff	Percentage of Responses
Adult Basic Education	17	20	85%
High School	11	23	48
Registered Nursing Assistant	9	12	75
Total	37	55	67

Analysis

As shown in Appendix C, mean values and standard deviations for the questionnaire items were calculated for the three staff groups separately. The rating scale was:

1 = Strongly agree
2 = Agree
3 = Neutral; no opinion; does not apply
4 = Disagree
5 = Strongly disagree

In the following, views expressed by the three groups are presented and compared. Comparisons are also made with interview findings. It should be noted again that only instructors' views are represented in the questionnaire, as only instructors were asked to complete it.

Views of ABE Staff

Table 9 shows the questionnaire items on which ABE instructors registered the greatest agreement (i.e., the ten items with the overall lowest mean scores on the questionnaire).

Table 9: Most Strongly Held Opinions in Agreement, ABE Staff

Item	Mean	Rank
8. No single mode of instruction is likely to suit all students.	1.35	1
14. Most students would benefit from alternative modes of delivery of instruction.	1.82	2
16. Most instructional staff could benefit from inservice programs in instructional methods for adults.	1.94	3
40. By the time a student leaves this program she/he should have chosen a realistic career goal.	1.94	3
46. All instructional staff should be given a regular opportunity for curriculum development.	2.00	5
2. Most students in the program would benefit from a program which included some individualization.	2.06	6
1. Individualized instruction should be an option for all students in the program.	2.12	7
12. Methods suited to the unique needs of students should be used, even if these methods are not available to students later.	2.18	8
29. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction.)	2.29	9
30. Computers are best used in this program to help manage some of the routine tasks such as record-keeping, drill and practice, etc. (Computer-managed instruction.)	2.35	10

Item 8, ranked first in agreement by ABE staff, forms a basis for understanding several other items in this table. The principle that no one mode of instruction will suit all students was also clear in the interviews, but resulted in a more conservative position regarding the availability and desirability of options and alternatives. (In the interviews, the view was taken that alternatives are chiefly for unusual learning situations where, for example, students have not been successful in the conventional classroom, or for parttime or off-site learners.) Here, acceptance of the need for options led to acceptance of computers, both for teaching and for management of learning; to acknowledgement of the value of various delivery alternatives; to a positive assessment of individualization; and to a firm declaration that the most appropriate learning conditions should be provided to students, even if these are not available in other stages of training.

Items 16 and 46, taken together, complement the information derived in the interviews concerning professional development and instructor interest in the complex task of designing curriculum for adults. In the interviews administrators and managers cited the importance of increasing instructor expertise, and of assisting programs to develop specialized curriculum development skills, through inservices, use of consultants, and other structured professional development activities. Instructors, on the other hand, seemed more interested in scaling curriculum development projects to the level of their present capabilities and needs, chiefly revision of inadequate materials. They expressed a preference for the team approach to the task of curriculum development, with the occasional assistance of outside consultants.

On the questionnaire the need for greater expertise in designing instruction for adults is acknowledged (item 16), but it is tied to the desire to use those skills in regular curriculum development opportunities. Instructors did state in the interviews that they were more comfortable as classroom teachers, but they were not content to remain permanently in that role. In item 46 they express their further interests in curriculum, and in learning more efficient methods of design.

Item 40 was a common concern of ABE staff, consistent with the views they expressed in the interviews about the importance of career opportunities and decisions for students. (Note, however, that on the final questionnaire this priority had significantly less support, for reasons which will be discussed below.)

Table 10 shows the items with which ABE instructors expressed the strongest disagreement.

Table 10: Most Strongly Held Opinions in Disagreement, ABE Staff

Item	Mean	Rank
33. The policy of AVC toward computer-based education is clear to most instructors.	4.35	55
32. Most staff in this program are "computer literate."	4.18	54
17. Most staff are adequately aware of potential uses of technology for alternative delivery of instruction.	4.12	53
34. The role of the instructor in computer-based education is well-understood by most instructors.	4.06	52
9. Developing alternative instruction and teaching methods in this program would probably require outside expertise.	3.88	51
7. Individualized instruction has been adequately tested in the department in the past.	3.82	50
37. Most staff in this program believe they will have a major voice in determining the use of computers in this program.	3.77	49
31. Most staff in this program feel comfortable with the prospect of computers in the program.	3.65	48
10. The present courses in this program are suitable for use by parttime students (i.e., students who attend on an irregular basis.)	3.59	47
11. Parttime students should be actively encouraged to enrol in the regular daytime program.	3.59	47
26. Changes in the curriculum are adequately evaluated to determine their effectiveness.	3.53	45

It is striking that, of these eleven items, six deal with technology generally, and computers specifically. Indeed, no statements on the questionnaire produced more consistent disagreement than those in the section on computers. Consistent with their complaints about the lack of planning and articulation, staff here complained that the institution's policies toward computer-based learning are unclear; that most staff are not yet computer literate; that their role as instructors in CBL is unclear to them; that they do not have a general understanding of the uses of technology in the alternative delivery of instruction; and that they feel they might not have a major voice in determining the ultimate use of computers in the program. Little wonder they conclude they are not comfortable with the prospect of computers in the program.

At the same time there was skepticism that changes in curriculum are adequately evaluated, including, in fact, changes featuring computers and other forms of technology. There was also skepticism that outside help would be needed in developing alternative methods. Viewed in light of the items which prompted great agreement (item 16, for example), the conclusion is again clear that instructors admit their needs for development but also see institutional needs for better evaluation, planning, and goal setting. They are not so much rejecting outside help as asserting their wish to be involved and prepared for change.

Finally, consistent with the agreement expressed earlier (Table 9), ABE instructors disagreed with the assertion that individualized instruction had been adequately tested already in the program. There was some indication in the interviews that this produced two staff convictions: first, that the present program is not suitable for parttime students, and, second, that parttime students should therefore not be urged to enrol. The ABE program had had some experience with parttime students in the past, both in regular daytime programs and in the evening Continuing Education program, and this experience had shown that special, "individualized" programs are needed to deal optimally with these students. These instructors may have been speaking from some negative experience in arriving at conclusions on the matter of parttime learners. It is also possible they may have simply felt the program was not up to the organizational and developmental demands involved, given the heavy existing demands on their supervisors, and the program's poor record in planning and evaluation.

Views of High School Staff

High School staff were approached separately with the same questionnaire. The researcher attended a staff meeting of the Math department in September, 1982, explained the purpose of the questionnaire, answered questions, and distributed copies with the request that they be returned within one week. Because of a scheduling conflict, the researcher was unable to attend the English department staff meeting. Instead, the Senior Instructor of High School English agreed to read a memo to the staff explaining the questionnaire and requesting assistance. A follow-up memo, with a copy of the questionnaire attached, was sent to both groups several weeks after the first requests, asking for return of the completed questionnaire by those who had not yet done so.

Table 11 shows those items upon which High School staff showed the greatest agreement.

Curriculum concerns predominate in Table 11. Concerning positive elements of present curriculum practice, these instructors agreed that the goals of the courses they teach are clear to them; their teaching methods are generally suited to the needs of adults; curriculum change is regarded as normal; and changes usually produce improvements. More generally, they felt most strongly that all instructors should have a regular opportunity to do curriculum development. Also, as

Table 11: Most Strongly Held Opinions in Agreement, High School Staff

Item	Mean	Rank
46. All instructional staff should be given a regular opportunity for curriculum development.	1.73	1
8. No single mode of instruction is likely to suit all students.	1.91	2
39. It is reasonable to expect students to have an occupational goal when they enter this program.	2.00	3
40. By the time a student leaves this program she/he should have chosen a realistic career goal.	2.00	3
21. Most staff in this program believe curriculum change is a normal occurrence.	2.18	5
3. Most students in the program would probably choose some individualized instruction if given the choice.	2.27	6
15. Generally, the teaching methods in this program are suited to the learning needs of adults.	2.27	6
20. Most curriculum changes in this department have resulted in improvements.	2.27	6
30. Computers are best used in this program to help manage some of the routine tasks such as recordkeeping, drill and practice, etc. (Computer-managed instruction.)	2.27	6
27. When changes are being contemplated in this program, staff are adequately consulted.	2.27	6

had ABE instructors, they are in strong agreement with the statement that no single mode of instruction will suit all their students.

High school instructors had definite views on individualized instruction. They agreed that most students would benefit from, and would probably choose, some individualized instruction, if it were offered to them. (In this connection they also agreed the computer-managed instruction migh be valuable in managing some routine recordkeeping tasks.) Some impetus for considering individualized instruction might have been lost in the general satisfaction with existing teaching methods.

Summarizing points of strong agreement, High School staff appear relatively satisfied with their present curriculum and instructional practices. They believe their methods are suited to adult needs, and that their development practices are healthy. They wish for more regular curriculum development opportunities, and they are somewhat ambiguous about individualization, but see some use for computer technology in managing learning arrangements to minimize purely clerical demands. Of the students they expect some initial commitment to a career goal, and a more firm decision by the time the program is completed. They are satisfied with the consultation they receive when curriculum changes are contemplated.

Table 12shows those items which produced the strongest expressions of disagreement by High School instructors.

Table 12: Most Strongly Held Opinions in Disagreement, High School Instructors

Item	Mean	Rank
33. The policy of AVC toward computer-based education is clear to most instructors.	4.00	54
34. The role of the instructor in computer-based education is well-understood by most instructors.	4.00	54
32. Most staff in this program are "computer literate."	3.91	53
7. Individualized instruction has been adequately tested in the department in the past.	3.64	52
9. Developing alternative instruction and teaching methods in this program would probably require outside expertise.	3.55	51
36. Most staff welcome the application of computers to instruction in this program.	3.46	50
55. Staff who work on curriculum development projects receive adequate recognition for their efforts.	3.36	49
10. The present courses in this program are suitable for use by parttime students (attending on an irregular basis).	3.27	47
43. Most students in this program can be expected to learn to manage their own study time efficiently.	3.27	47
37. Most staff in this program believe they will have a major voice in determining the use of computers in this program.	3.18	45
47. This program should have a standard approach to curriculum development which is followed in all curriculum development projects.	3.18	45

In contrast to the satisfaction High School staff expressed with their present program and methods, they were quite critical here of items which might suggest future change. They had earlier agreed that individualized methods could increase their clerical overload, and acknowledged that computer-managed instruction might help with this burden. Here, however, they criticize the lack of an institutional policy on computer-based learning, reject the statement that their instructional role is clear in a computer-based learning situation, deny most staff are comfortable with the prospect of computers in the program, admit that most staff are not yet computer literate, and are skeptical they will be consulted in a major way on the integration of computers with traditional instruction.

Regarding curriculum, High School instructors reject the need for outside expertise to develop alternative methods of delivery and instruction, and clearly disagree with the proposition that instructors who do curriculum development receive adequate personal recognition for their efforts. Altogether, it seems that High School instructors do not feel they have been given an opportunity to do curriculum development as well as they are capable of doing it, and they seem not to agree with some of the directions presently being taken (outside curriculum expertise, for example). They reject too much standardization of development, but not categorically.

In summary, High School instructors do not welcome the arrival of computers in the program, sure as they are only of their own computer illiteracy, and unsure of such basic matters as institutional policy toward computer-based learning and their own role vis-a-vis the new technology. They do not feel their present curriculum development efforts are generally recognized adequately, and resent the suggestion that outside expertise would be needed to accomplish change in the future. They are strongly in favor of regular curriculum development opportunities for instructors. They do not regard the program as suited to parttime learners, possibly because individualized instruction has not been tested.

More positively, High School instructors are eager to become involved in curriculum development, especially related to individualization. They accept the usefulness of instructional alternatives generally, including computer-managed instruction. They are confident of the appropriateness of present instructional practices, but are also aware that curriculum change is a normal occurrence in the program, and that change usually produces improvements.

Views of Registered Nursing Assistant Instructors

Staff of the Registered Nursing Assistant (RNA) program were asked to complete the questionnaire to provide a different perspective on these questions. As noted in chapter 4, the RNA curriculum in Alberta is directly affected by legislation, and curriculum development in the program has been in close cooperation with the Alberta Vocational Centre, Calgary, the only other institution in the Province in which training of RNAs occurs. It was felt that the views of these instructors might reflect their different curriculum experiences in some areas.

Table 13 presents those items which garnered the greatest agreement from RNA instructors.

Table 13: Most Strongly Held Opinions in Agreement, RNA Staff

Item	Mean	Rank
2. Most students in the program would benefit from a program which included some individualized instruction.	1.33	1
8. No single mode of instruction is likely to suit all students.	1.54	2
39. It is reasonable to expect students to have an occupational goal when they enter this program.	1.78	3
40. By the time a student leaves this program she/he should have chosen a realistic career goal.	1.78	3
52. When curriculum development activities are completed, staff are usually informed adequately about them.	1.78	3
3. Most students in the program would probably choose some individualized instruction if given the choice.	1.79	6

Table 13 (Continued)

Item	Mean	Rank
16. Most instructional staff could benefit from inservice programs in instructional methods for adults.	1.89	7
20. Most curriculum changes in this department have resulted in improvements.	1.89	7
29. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction.)	1.89	7
46. All instructional staff should be given a regular opportunity for curriculum development.	1.89	7
48. The instructional goals of this program are clear to most instructors.	1.89	7

There was clear support for the belief that individualized instruction would be both beneficial and popular among RNA students. This view was accompanied by the familiar opinion that no one method of instruction would be suited to all students, a rationale for individualizing the program.

Regarding computers, these staff feel there is a place for computer-assisted instruction. (Recall that RNA staff had had experience with PLATO in their program, as described in chapter 4.)

Generally, RNA instructors were positive about several curriculum elements. They believe they are adequately informed of curriculum development results, that curriculum change usually result in improvements, and that the program's instructional goals are clear to them. They did agree that most staff would probably benefit from inservice presentations on instructional methods for adults, but they apparently view this as professional development rather than remediation, as they also feel they should be given regular curriculum development opportunities.

It is not surprising that instructors expected students to have clear career goals when they enter the program, given the training nature of the program. To this instructors added the goal of providing students with clear, realistic career goals at the end of the program. Presumably this would apply both to successful graduates, and to drop-outs from the program.

Table 14 presents those items with which RNA instructors disagreed most strongly.

Table 14: Most Strongly Held Opinions in Disagreement, RNA Instructors

Item	Mean	Rank
32. Most staff in this program are "computer literate."	4.00	55
7. Individualized instruction has been adequately tested in the department in the past.	3.89	53

Table 14 (Continued):

Item	Mean	Rank
34. The role of the instructor in computer-based education is well-understood by most instructors.	3.89	53
11. Parttime students should be actively encouraged to enrol in the regular daytime program.	3.78	52
33. The policy of AVC toward computer-based education is clear to most instructors.	3.67	51
37. Most staff in this program believe they will have a major voice in determining the use of computers in this program.	3.56	50
5. Regular group contact for students is not a usual feature of individualized instruction.	3.44	49
4. Individualized instruction often results in isolation for students.	3.33	47
31. Most staff in this program feel comfortable with the prospect of computers in the program.	3.33	47
38. A goal of this program ought to be to make students "computer literate."	3.22	45
41. Most students in this program can be given major responsibility for their own learning.	3.22	45

There was definite rejection by RNA instructors of the idea that individualized instruction has been tried. This is congruent with the highly positive sentiments expressed in favor of individualized methods, presented above. Further, these instructors emphatically rejected the notion that regular group contact might not be a part of individualized instruction, or that isolation inevitably results from individualization.

Regarding computers, RNA staff share the negative sentiments and reservations of the Academic Upgrading staff: they do not feel computer literate, they feel the institution's policies toward computers are unclear, they do not know their role as instructors in computer-based education, and, in total, they are not comfortable contemplating the computer's arrival. Their reasons for rejecting computer literacy as a goal for their students are not clear, and bear further investigation.

RNA staff agreed with their colleagues in Academic Upgrading in counseling against parttime students being encouraged in the regular program, and expressed skepticism that students could be given major responsibility for their own learning outside of the regular program. Again, the lack of a truly individualized program may have fostered these views.

In summary, RNA staff are highly positive about the potential for individualized instruction methods in their program, and definite in stating individualization has not yet been given a real trial in the program. They see a role for computers in the program, but are definite in rejecting thoughts that they or the institution are adequately prepared for the smooth incorporation of computers. Needs for computer literacy programs for staff, and policy statements defining the instructor's role and the institution's future commitments to computerization of learning were identified. There is interest in inservice programs in instructional methods for adults. These staff are satisfied with some important elements of curriculum development, including communication of results of curriculum development projects and positive feelings about the results of previous curriculum development experiences. Finally, instructors feel present students require substantial guidance in managing their own learning, and that parttime students ought not to be actively recruited.

Comparison of the Initial Questionnaire Responses of the Three Instructor Groups

On a number of items the three instructor groups shared similar outlooks. Table 15 shows items which were ranked among the ten most agreed upon, or the ten most disagreed upon, items in the questionnaire by all three groups.

Table 15: Common Areas of Agreement and Disagreement

Item	Adult Basic Education (n=17)		High School (n=11)		Registered Nursing Assistant (n=9)	
	Mean	Rank	Mean	Rank	Mean	Rank
High levels of Agreement:						
8. No single mode of instruction is likely to suit all students.	1.35	1	1.91	2	1.44	2
40. By the time a student leaves this program she/he should have chosen a realistic career goal.	1.94	3	2.00	3	1.78	3
46. All instructional staff should be given a regular opportunity for curriculum development.	2.00	5	1.73	1	1.89	7
High Levels of Disagreement:						
7. Individualized instruction has been adequately tested in the department in the past.	3.82	50	3.64	52	3.89	53
32. Most staff in this program are "computer literate."	4.18	54	3.91	53	4.00	55
33. The policy of AVC toward computer-based education is clear to most instructors.	4.35	55	4.00	54	3.67	51
34. The role of the instructor in computer-based education is well understood by most instructors.	4.06	52	4.00	54	3.89	53
37. Most staff in this program believe they will have a major voice in the use of computers in this program.	3.77	49	3.18	45	3.56	50

Clearly, computer applications in the various programs concern all staff. As has been noted, instructional staff are worried about the lack of an institutional policy on computer-based education, and about their own role vis-a-vis computers. They further doubt they will be consulted about these questions, and they freely admit their present lack of computer literacy, doubtless a major contributor to their feelings of discomfort with the new technology.

Worries about the coming of computers to the programs are not a rejection of the need for curriculum renewal or change, as other items of common agreement show. All groups solidly support the principle that no single mode of instruction will suit all students, and they all believe individualized instruction has yet to be tested adequately. Further, all groups are in favor of providing regular opportunities to instructors for curriculum development.

Finally, as might be expected in a Vocational Centre with a vocational preparation mandate, all programs have strong feelings about the need for students to develop realistic career goals by the time they leave the program.

The Questionnaire Analysis Panel

Introduction

A number of the questionnaire items were, to greater or lesser degrees, problematic. That is, rankings and means on some items did not adequately reveal the sentiments being expressed. It was felt some attempt should be made to understand the meaning of certain responses. In order to clarify these difficult items a panel of four experienced instructors was recruited, two each from the math and English areas of the High School and Adult Basic Education programs. Each panel member was provided with the results of the questionnaire, and a list of the items suggested for discussion (Appendix C), and was requested to study these to prepare for a meeting with the rest of the group. The two resulting discussions were led by the researcher, the proceedings were taped and transcribed, and each member was asked to verify the transcript. No changes were requested by any member. (Appendix Q contains a somewhat edited version of the transcript. The reader is urged to read some of this Appendix as the discussion there captures many of the nuances of reasoning and thought which many of the staff interviews contained, and which are often unavoidably sacrificed in the brief summaries provided here.)

Individualization

Advantages. Lack of clarity regarding this term was a frequent complaint, but some components of the concept were nevertheless identified in present program practices, especially in High School English.

The benefits of individualization are clearly related to classroom flexibility, but on a limited scale. The High School math instructor recounted a past experience in his Math 13 class and recalled with emphasis the success of this experiment (see Mallett, 1977). He also noted the advantage that student attendance during that experiment was far less significant for students using individualized materials and methods. The High School English instructor expressed her belief that existing courses incorporate varying amounts of individualization already, sometimes without instructors actually recognizing the fact. She referred specifically to a programmed grammar text and a series of audio tapes for reading comprehension, available in the library.

Disadvantages. The panel cited several cautions regarding individualization. Both High School instructors pointed out that individualization should not be construed as permission to deviate too much from the Alberta High School Curriculum Guide, in view of the fact they are teaching accredited courses, and because of the need to prepare students for the impending "Comprehensive Examinations." (It was assumed most High School students in the institution would choose to write these examinations, although their appropriateness and usefulness for adult students is not clear.)

A second issue is the time and organization required for preparing individualized materials and procedures, and the need for adjustments to staffing ratios in order to manage individualization effectively. The Basic Education English instructor asserted that staff do know about the advantages of individualization but are put off by the numbers of students they are required to teach at a time. She mentioned that help with "marking" would assist, though this idea (in the context of a discussion of paraprofessionals in the program) was rejected by some instructors in their interviews. A related third point is the belief that individualization would benefit better students, but would be unworkable with the less motivated or those with reading problems.

Isolation and Individualization. Evidence of the definition of individualization some staff are using was found in some comments about isolation. In particular, "If they really want individual work . . . they should go to the Correspondence School" is illuminating. As noted in chapter 2, individualization does not mean working alone. Hodgkinson (1975) says: "Individualized learning means working individual student differences into the learning process rather than ignoring them" (p. 85). He concludes: "Wanting to learn is at the heart of individualized instruction" (Ibid.). (Further reference will be made to this point below, in the discussion of student characteristics, where the problem of motivation arises.) Bloom's (1976:3) advice that students work together in groups as a means for improving morale and motivation has already been mentioned, as has the advice of writers on Developmental Studies emphasizing the importance of the instructor to the organization and evaluation of the learning process (Mink, 1977: 53-54; Moore, 1976). And Carroll himself identified affective factors and the quality of instruction as indispensable to learning, both of which require the possibility of free student-instructor and student-student interaction.

Misconceptions about individualization notwithstanding, the High School math instructor described his present method of instruction in Math 30 as more isolated and impersonal than what he imagined individualization would produce. Bearing in mind that he is the instructor with the greatest prior experience with individualization, his comments are perceptive, and reveal what insights actual experience can impart.

Testing Individualization. The reservations and misconceptions the panel believed existed among instructional staff regarding individualization led to the conclusion that a broad implementation of the concept would be unwise. They did agree, however, that a class or parts of various courses could be individualized where the subject matter consists of clearly measurable skills or rote knowledge. (The by-play at this point in the interview is interesting for what it reveals about previous debates between disciplines on these and related questions.)

To summarize, the panel confirmed that individualization is regarded as a potentially beneficial element in the curriculum, but one that is highly dependent upon the availability of certain resources, the subject matter, the level of the students, and the inventiveness and flexibility of the instructor. The panel felt that among staff it is almost universally assumed that individualization means limiting the students' contacts with other students and with the instructor, and that the concept would therefore chiefly apply to well-motivated, capable students. There is also the implicit assumption by instructors that in individualized instruction the instructor plays a minor, remote role, with primary reliance for learning placed upon other resources, and the student expected to choose wisely from among them.

Outside Curriculum Development Assistance

The panel described several kinds of "outside" assistance and the attitudes they felt existed about each. They believed most staff felt that hiring consultants or researchers to give advice on planning and development of curriculum might be unnecessary, that "we can do our own housecleaning." Further, they argued that the development work "definitely has to be supervised . . . but definitely not dictated." There was strong feeling that "the expertise is here, within the building," the result of much adult education experience.

Consultants could, it was agreed, offer "guidelines," "guidance, or even evaluation," to make instructors' efforts more efficient, and less protracted and repetitious. The chief discouragement in curriculum development seemed to be, for the Basic Education English instructor, the feeling of being in transition from one curriculum outlook to another, without grounding in or commitment to either. She spoke of being "right in the middle now," and of waning enthusiasm for the complexities and pace of the development task. She wanted someone to help "set it up" and "pull all this together in a shorter time."

Outside help would be acceptable to at least some staff if it did not appear to be "determining what we were going to teach." Coordination, evaluation (undefined, but probably related to obtaining consensus on areas of needed curriculum revision), and guidance -- "pulling it all together" -- are acknowledged as areas of need. Any outside assistance must also be collaborative, consultative and collegial, it is abundantly clear both from the panel and the instructor interviews.

Instructional Methods

This part of the discussion produced some marked differences of opinion. Initially, the High School English instructor spoke with satisfaction of the presence of what Carroll (1963) called "incidental learning" in her classroom:

> That student-teacher contact is very important. They're free to go to the library at that time, they're free to go and do many things. But often you'll hear students say, I'm afraid if I do I'll miss something. And it's not something I'll be teaching them, but it's something they'll hear me saying to somebody else, and I may go to the board, or I may do something else. It's that teacher-student contact. They don't want to leave that room.

In his treatment of incidental learning, Carroll had noted that, "whether rightly or wrongly," teaching is often organized in schools to encourage it. He distinguished this incidental learning from his concept of clearly defined "learning tasks": ". . . going from ignorance to knowledge, or proceeding from incapability . . . to capability" (*Ibid*., p. 723). He added that his model of school learning assumes that "the task can be unequivocally described and that means can be found for making a valid judgment as to when the learner has accomplished the learning task" (*Ibid*., p. 724).

Obviously, not all learning in High School English classrooms is incidental, as described above. But neither does there appear to be a clear concept of "unequivocally described" and carefully evaluated learning tasks. What is valued is extemporaneous "teacher-student contact" which exposes emergent topics and produces ad hoc lessons using available media. The outcomes for the students (both the active participant and the "evesdroppers") are not known in any systematic way, except that it appears students fear missing these sessions and forego opportunities for more self-directed learning to witness or participate in them.

The High School English instructor went on to describe her views (which she felt were those of her colleagues) regarding the use of various, perhaps less than optimum, teaching methods in High School English courses. The following lengthy exchange is presented to show more of the different thinking regarding methods and the nature of the teaching/learning contract among these staff.

> HSE[1] . . . they're saying we have to prepare them for NAIT [Northern Alberta Institute of Technology] and university. And they must become familiar with the modes of presentation they're going to meet at those levels. That's what our focus pretty much has to be. I asked that same question in a staff meeting today, and that was pretty much the answer I got. Well, you know, they're not going to be allowed to turn in assignments late or necessarily be allowed to work at their own speed.

. . .

> Q Let me put it this way. Would there be any conflict if students in Basic Education were being prepared with methods suited to their basic level, coming into our High School? Would that be perceived as a problem?

---

[1] High School English instructor.

HSE Yes, I believe so. If it was at the [grade] 7 to 9 level. Because the 7 to 9 is a feeder course to the High School. Those are the people you have there who you expect to go on to the High School, so I would expect you would find teachers saying that they should be prepared to accept the methods and follow the procedures that are set for this particular level . . . .

BEE[1] Unless they're options available. Too bad if there aren't.

HSM[2] . . . I don't follow that point. This whole thing has gotten confused. What is it you're saying? If Basic Education used specific methods which were different from those in High School, would there be a problem?

HSE I said no, they wouldn't feel that. But at the end of 7 to 9 possibly the methods should be closer to . . . .

HSM Kind of phasing in? We should be more or less the same?

HSE Not entirely, but so that they can work independently in group situations and all the other requirements that are there. And maybe not so much spoon-feeding. These are things that have come up.

BEE I'm not wild about that. To me that's the next level dictating our methods, and I think we all approach things differently and we all do things differently in the classroom.

It is interesting to note that those objecting to dictation of teaching methods did so more on grounds of instructor autonomy than on the basis that ABE students have different learning needs. The issue seemed finally to hinge on the question of whether Basic Education "spoon-feeding" methods were unfair to students, since they would not have access to such methods in High School. High School instructors, according to this panel participant, took the view that they must employ methods presumed to predominate in institutions of higher learning (though, as subsequent discussion revealed, exceptions are made for students whose educational ambitions do not include going on to further education or training.)

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[1] Basic Education English instructor.

[2] High School Math instructor.

In employing these methods (consisting chiefly of requiring students to take notes from lectures, work independently in group situations, and do without "spoon-feeding") High School instructors were not necessarily arguing for their efficacy, only that there is a need to help students prepare for less flexible, less self-directed methods. Another view was expressed by the High School math instructor, who noted that in the math area efficacy is the touchstone, and that methods are less important that achieving the desired outcome: content mastery. He was not sure it was a negative thing that ABE instructors provide more guidance and latitude in trying to provide functional coping skills to students at the lower levels.

The issue of instructional methods is, of course, central to curriculum because methods are (or ought to be) the object of as much attention as content when curriculum development is undertaken. There is evidence here that instructional methods may not have received as much attention as content in curriculum development, because methods are largely dictated by prior assumptions made in the High School. Some instructors on this panel did not accept that methods should be employed in the ABE program to reflect practices elsewhere, irrespective of their appropriateness with students at their present level of educational and personal development. There also seemed to be indications that most students were given this "inurement" treatment, whether they planned to go on to further training or not. The counter view held that upper level practices ought not to dictate lower level teaching methods, and that what was important was what students learned, not how. This view would have regarded "spoon-feeding" as a legitimate option for students unable yet to educationally "feed" themselves.

The vigor with which these points were debated and defended indicates the sensitivity on both sides of the issue. ABE instructors have a history of dealing differently with students in their program, having pioneered Life Skills and Basic Job Readiness Training, work experience and special Work Placement staff, the "homeroom" learning environment, and direct preparation for skill training in the trades and clerical fields. ABE instructors are aware that some High School instructors feel these practices are inappropriate for High School level students, and frown upon the fact that students sometimes come from Basic Education expecting them. Some ABE instructors view these attitudes, rightly or wrongly, as evidence of the High School program's basic lack of sympathy with students' unique, non-academic needs, and they suspect that learning conditions in the High School courses often needlessly mitigate against those of their students who need special learning conditions.

Well-Planned Change

There was a difference of opinion here about whether planning is usually done well enough in the Academic Upgrading program to produce needed changes efficiently. The High School math instructor put his view succinctly:

> I think everyone I talked to said curriculum is a key aspect of our courses. Obviously, that's the course. But it's not backed up with a facility that allows us to do a quality job. I'm thinking there in terms of actually producing materials, and maybe in conjunction with that, adequate time off. I've heard that said more often. I don't think I've ever heard, Yeah, we'd get on with curriculum, but we don't have a good plan yet. We know in our minds what we want to do. I'm not sure we need a lot of pre-planning.

His view was contradicted somewhat by the Basic Education English instructor:

> Maybe if we started with a clearer picture of what the final product should be there would be less time spent revising. It's also a lack of time and a lack of people to do the software.

Whether or not there is a clear view in everyone's mind of what the final curriculum product ought to be, both instructors here agree resources for doing a "quality" job of development are lacking. In the interviews, instructors did not identify problems with materials or resources for curriculum development. It may be apropos to recall the insightful comment of the manager who noted that staff sometimes complain of the lack of some material resource such as time, money, or facilities, when they are really lacking a clear development goal -- a "final phase" or "objective."

It is also noteworthy that the panel did not identify greater supervision or leadership from administration as a need. In the interviews this had been a major complaint of the administrators, who had argued little time was available to them to plan and oversee change because of their other duties. These instructors felt curriculum development is an ongoing need which they could look after adequately themselves, given proper support services and clearly defined goals. While they may not have denied the usefulness of administrative involvement, if they had been asked specifically, they simply did not see it as a priority.

Learning About New Technology

On this topic the panel identified problems with how inservices were being used to introduce new computer technologies to staff. One panel member, who had taken one of the inservice series, commented:

HSE I did take that one that was offered, the trial run, that was offered to some. And it was very good, it was very well done. The only trouble with it was it was at the end of the day and everyone was tired. And I just haven't had the time to go down and practice it and I'm afraid I've lost what I did learn. That's important, not only the idea of training sessions but some follow through.

Q Was there any value in what you did do, in any terms?

HSE Oh, yes. At the time I was quite eager to get going. I learned a lot and looked at some programs.

Q Would you recommend that for everyone, even if . . . ?

HSE Certainly not at the end of the day. I found I had a headache every night when I went home. Of course some nights it was three hours long. But every night was a headache. Three thirty is not an appropriate time.

Besides the inconvenience caused participants by the time of day of the inservice, and the disappointment caused by the fact that the newly-learned skills, not used, quickly atrophy, the panel spoke of their impression that some staff believe computers are just another educational bandwagon. This led the High School math instructor to go against the prevailing sentiment and declare his skepticism about the value of more and more inservices for these people. This view was supported by the Basic Education math instructor:

HSM As far as extra inservices are concerned, we've got that computer room downstairs, ________ has done some initial work, we've got PLATO, we've got booklets all over the place, we've got self-paced modules that are programmed for people who are interested. I think it's there. I don't think a massive inservice is going to change attitudes.

> BEM No, it's the attitude thing more than the inservice. Absolutely. And time. And, in a way, attitude. I think some of the staff are thinking that eventually this thing will just go away, and I don't have to spend any time on it.

Despite these unhelpful developments, staff attitudes generally (as was shown in the questionnaire results presented earlier) and those of the panel are not negative about the potential of the medium. Compare, for example, the questionnaire results with this analysis offered by the Basic Education math instructor:

> And staff is hung up on a very negative attitude towards computers, I think. In Basic Education. Okay, I'll say all Upgrading, and go the whole way. They see it only as one thing. It's what you were talking about last time on the tape, the hang up in the terminology about what is individualized instruction. Is it a package thing you sit and work through? And I think we all agree we don't want that sort of thing. So that sort of mix up in the terminology of individualized instruction gets equated with computers.

Both of these points are contradicted by the questionnaire findings. First, staff do not have a negative attitude toward either computer-assisted or computer-managed instruction per se, but they are disturbed by several uncertainties about plans for implementation of computer-based learning. Second, individualized instruction is positively viewed, but nervousness arises over anticipated difficulties in adequately planning, implementing, and evaluating trials of individualization, given pressure on administrators and a history of unsatisfactory performance in these areas.

Without clear high-level leadership and direction regarding intended uses of new technologies, it appears to instructional staff that the issue of incorporating, or even of becoming familiar with, various technologies should be deferred. The High School math instructor voiced this outlook:

> Well, my feeling toward the whole idea of computer education at this point, and trying to reflect the feeling of the High School math-science, in our case there's so much happening right now, such as the five versus seven block discussion, we've changed the length of our program, we've cut our courses up different ways and we're now trying to get materials to supplement those new outlines that we've got, that's right on top of our minds. And until that settles in I don't think anyone's going to be too enthusiastic toward anything else. We're just at the point now where we're trying to be sure we've got the basic product out to the students.

Instructors, according to this view, feel other things might be given priority. Lack of clear plans and policies regarding the investigation and implementation of the new technologies may have even given impetus to the view that the whole thing is, in fact, just another bandwagon.

Student Responsibility for Learning

Discussion of this topic began with a complaint by one member of the panel that her class was disappointingly unreliable in handling homework assignments. There were incidents of students copying from one another, and the instructor saw little appreciation of the laborious corrections she made on assignments. She concluded her statement by saying she was determined to continue to try inculcating "adult responsibility" in her students, but she was "surprised and disappointed" at their initial response to the responsibility she had tried to place on them. The other panel members consoled her by pointing out that shirking homework was not unusual, that even graduate students were sometimes accused of it. The discussion then dealt with ways of checking to see that assignments were being done.

The researcher became involved in this portion of the discussion because he felt the central issue was being missed. He reacted to two points: first, that students might not have, as part of their adult prerogatives, the right not to do assignments they do not find useful or involving, and second, that some students who did do the assignments might not "pass," and that nothing is done to try to prevent this. The discussion among panel members did not seem sensitive to these issues, so the researcher intervened to ask for (and offer his own ideas on) clarification of the terms "independent learner" and "self-directed learner." His specific purpose was to determine the meanings assigned to these terms by the panel, and to suggest that the term "self-directed learner" could refer to a very low academic level student who possessed certain other skills.

The following exchange shows the reasoning applied by the panel to the researcher's leading and rather hortatory questions.

Q Is independence related to aptitude? Or, to put it another way, could a very low level student with minimal aptitude learn to be self-directive in his learning?

HSM Bloom would say, given enough time, yes. I don't know.

Q You would be skeptical.

BEM I would be skeptical on that. It's a matter of degree. Certainly right now I can think of in my classroom the more independent learners are not the most intelligent ones in math. It takes them more time, they spend more time on their homework. More time mulling it over and thinking it over. But they have acquired enough skills to go on with it. But there's a bottom level to that. I've got some who just can't get a base there, no matter how many hours they're spending at it. There's certainly a reasonable correlation between those two. You've got the better reading skills, better problem solving skills . . . .

HSM Right. The independent learner needs very little drill.

BEM Yes.

HSM As opposed to those at the basic level where you take up a concept and you drill it and drill it and drill it.

Q Are we using the terms independent learner and self-directed learner as synonyms?

HSE I would think so.

HSM To a certain extent, yes.

HSE I'm not sure how that really ties into the idea of responsibility, either.

Q Try this out. I would call a self-directed learner one who is responsible for his learning, but an independent learner is one who is so bright, and has such a broad base of prior learning, that nothing new is likely to throw him for long. The person who can take the manual for the Apple and figure it out. Or the one who can take the algebra textbook and figure out polynomials from his general math background. Whereas one with a very low level of general education may not have very much skill, but one of the skills he does have is the ability to muster the resources he needs to learn, whether they be human or mechanical or paper and pencil or whatever. And will get the help, and will know when to ask for help.*

HSE And you're calling that self-directed?

Q Self-directed, yes. And that person, then, has taken responsibility for the level of learning he wishes to achieve, whatever that might be.

HSE In the English, I was just thinking the other day, we're doing the last major assignment. And my very intelligent students are the least independent, and the least self-directed. And they're doing probably the worst job.

HSM Isn't that interesting! Run that by me again. Your . . . .

HSE The ones that I classify as my most intelligent are also probably my most immature. They are the least self-directed.

Q Would you call them irresponsible?

HSE Yes, I would label them irresponsible in all aspects of this particular assignment. They certainly have the ability, knowing their reading and writing skills. A couple of others in there who are not really strong students at all, with direction from me, have done each step of the process that's needed.

BEM Did it only happen to those students on this assignment?

HSE Oh, no. I'm saying there are people in my classes who keep doing things like this. And I think maybe that's quite common. Often in the English area we find it's the self-directed learner who's quite successful. The ones who aren't go write the Department of Education exams and get into University with that mark.

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*Moore (1980:23), discussing learning "autonomy," distinguishes "instrumental independence" (learning alone) from "emotional independence" (learning without outside encouragement.

Q Without the maturity to monitor their own learning. So if we could put it this way, the brightest students are not necessarily the most self-directed, and . . . .

HSE And not necessarily the most successful. If you get a bright light in your classroom they can have more insight into literature. But they may not have the writing skills or the discipline. They may do well in other areas but be held back because of English, and that's just because they don't direct their efforts.

HSM That's such an important point, about work habits. What I try to do is emphasize a process. I say, Look, I don't just expect an answer. I expect legible writing. I expect all sorts of things in math.

This exchange was fundamentally disappointing, ending as it did with a homily about work habits and instructor expectations for penmanship, and deflecting the discussion away from the issue of what students, even at the lowest academic levels, might do for themselves in learning. The point the researcher had hoped to make, and to hear reactions to, was this: The brightest (i.e., the most independent) students are not necessarily the most self-directed, and the least independent (i.e., the least academically able) do not always lack well-refined skills and habits of self-direction. Responsible adult behavior, the panel had already agreed, does not always reside in the greatest measure in the brightest students. It seemed but a small step to state the converse.

In the interviews the complaint had been heard that the institution lacks a formal statement regarding its clientele which would describe the "contract" the institution wishes to develop with its students. In this part of the panel discussion insight was provided to the institution's (or, at least, the Academic Upgrading program's) de facto view of its clientele. Included in this informal statement seems to be a rather low appraisal of students' abilities to organize or to learn organization, a feeling of benign pessimism about the decisions students might make for themselves affecting their learning, and a kind of resigned paternalism regarding the instructor's role. It is not an unfond paternalism by any means, but a view of the student is contained in it which sees him as a larger, over-age version of his public school counterpart, in need of the same guidance and remonstrations, and capable of little more responsibility.

Standardization

The final question addressed by the panel dealt with the issue of a standard format for curriculum development. On the questionnaire ABE instructors had agreed to the need for a standard format, but High School instructors had been undecided. The question was raised here in the context of discussions on the subject of a format for curriculum development which had occurred in 1982, as part of the work of the Curriculum Committee (see chapter 4).

Some responses indicated support for a degree of standardization to assist administration of the program. The High School English instructor mentioned that instructors could not always be relied upon for "professionalism," that they might "just do [their] own thing," and that standard exams helped to ensure against this to some extent. She also felt standardization was useful when students had to be shifted from one section of a class to another.

Other responses expressed reservations about standardization, citing the possibility that individual instructor autonomy might be affected. The following exchange is illustrative:

> **HSM** I don't see the advantage of a standard curriculum. My thinking on that is the success of my students is dependent on what I do. I could have the best curriculum in the world, the best stated objectives. That doesn't translate into student success, necessarily. A good teacher can make a poor curriculum work, and the converse is true, also. The best curriculum in the world, with someone who is not keen on it, will result in it not working.
>
> **HSE** Except that if you do have a degree of standardization in your curriculum, and you have a poor teacher, your self-directed student will get a fair amount on his own.
>
> **HSM** If the program is set up in such a way that it could work on an individualized basis, that's a big payoff.
>
> **HSE** Yes.
>
> **HSM** I agree one hundred percent on that.

There is strong agreement with the notion that the capable instructor must believe in the methods and materials he takes with him into the classroom. On the other hand there is acknowledgement that a poor teacher could be made better by a curriculum which provides substantial guidance in methods and content, associated with specific, written objectives. Advantages were also seen for students in a curriculum which fosters self-direction in learning. The panel was faced with the conundrum of avoiding endorsing contradictory principles: A good deal of control over classroom activity should be retained by the instructor, but a good many strong recommendations regarding methods and materials should be diplomatically made. Collegial and consultative decision-making about curriculum was believed to be possible. Instructors on the panel had experienced close, willing cooperation on curriculum, and appeared comfortable with this relationship.

The word "professionalism" was frequently used in this part of the discussion, and no one either challenged its use or asked for clarification of its meaning. Perhaps it refers to the quality of enthusiastic acceptance of a certain amount of curriculum structure, praised in some new instructors by the High School English instructor, combined with a judicious and conscientious rugged (or at least sturdy) individualism, like that of the High School math instructor: ". . . the success of my students is dependent on what I do."

The Final Staff Questionnaire

As explained in chapter 6, the initial fifty-five item staff questionnaire was analyzed by ranking the agreement expressed by the three staff groups, Adult Basic Education, High School, and Registered Nursing Assistant. Using this procedure, the ten items which produced the most agreement and the ten which produced the most disagreement were selected for closer initial scrutiny (see Tables 9 to 15).

These twenty most agreed/disagreed upon items were subsequently used again in the final staff questionnaire (Appendix B), and the same instructor groups were asked to complete the final questionnaire in May and June, 1983. Return rates for the three groups on the second questionnaire were as follows:

Table 16: Final Questionnaire Return Rates

Program	Number of Responses	Total Staff	Percentage of Responses
Adult Basic Education	19	20	95%
High School	11	23	48
Registered Nursing Assistant	12	12	100
Total	42	55	76

Table 27 (Appendix V) shows a comparison of the results of the initial and final questionnaire. Table 28

shows those items on which there were differences* from the initial to the final questionnaire within each of the three groups.

It is noteworthy, in the first place, that few items showed changes in the interval from autumn, 1982, to spring, 1983. Clearly, the bulk of these views were indeed resilient to change. The second noteworthy fact is that on only one item did more than one group show a change: both ABE and RNA instructors showed more agreement or, in the case of ABE instructors, less disagreement on the second questionnaire with the statement that most staff believe they will have a major voice in determining the use of computers in the program (item 16).

ABE staff moderated their disagreement with two other items related to computers or technology generally. They felt themselves somewhat more aware of uses of technology for alternative delivery of instruction, though they were clearly not yet content with their familiarity (item 9), and they felt somewhat less "computer illiterate," though again they perceived a need for more such training (item 13).

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*Differences were identified using "Student's t" distribution, as described by Siegel (1961:188):

$$t = \frac{\bar{X} - \mu}{s} \sqrt{N - 1} = \frac{\bar{X} - u}{\hat{s}\sqrt{N}}$$

Where: $\bar{X}$ = the sample mean
μ = the population mean
s = the standard deviation of the sample
$\hat{s} = \sqrt{N/(N - 1)}\, s$

Table 28: Changes Within Groups from Initial to Final Questionnaire

Item	Initial Questionnaire Mean	Initial Questionnaire S.D.	Final Questionnaire Mean	Final Questionnaire S.D.
ABE Instructors	n = 17		n = 19	
9. Most staff are adequately aware of the potential of technology for alternative delivery of instruction.	4.1*	.7	3.6*	.83
13. Most staff in this program are "computer literate."	4.2*	.64	3.7*	.82
16. Most staff in this program believe they will have a major voice in determining the use of computers.	3.8**	.56	3.3**	.99
17. By the time a student leaves this program he should have chosen a career goal.	1.9*	.56	2.8*	.98
19. Most students in the program would choose some individualization if it were offered to them.	2.7*	.93	2.2*	.71
High School Instructors	n = 11		n = 11	
1. Most students in the program would benefit from a program which included some individualization.	2.5**	1.13	1.8**	.41
7. Most students would probably benefit from alternative modes of delivery.	3.0*	.89	2.0*	.45
RNA Instructors	n = 9		n = 12	
2. Individualized instruction has been adequately tested in the past.	3.9**	.78	2.6**	.79
16. Most staff in this program believe they will have a major voice in determining the use of computers.	3.6*	.88	2.7*	.49

*Significant beyond the .01 level
**Significant beyond the .05 level

On the question of whether students would choose individualization if it were available, ABE staff made a large movement toward greater agreement, while the other two groups, though maintaining agreement, moved slightly in the opposite direction. (Given the high level of agreement they continued to express, this may simply have been a case of regression toward the mean.) At the same time, ABE instructors clearly changed their minds about whether students should be expected to have a career goal by the time they left the program. Explanations for the change in outlook on both of these items may be contained in a matter which was discussed at the May 16, 1983, ABE staff meeting. The discussion was based upon the following rationale, circulated to staff with the Staff Meeting Agenda (Adult Basic Education Program, 1983).

> In discussions with staff the following concerns have been identified:
>
> 1) Requiring students to state a goal when they enter the program causes problems if the goal is unrealistic. If the goal is realistic, having it stated is helpful, however.
>
> 2) All students require an assessment period when they return to school, during which vocational and personal goals can be clarified, and adjustments made to the demands of student status.
>
> 3) An assessment is also required of the student's learning capabilities and preferences, as these effect his opportunities for training and his optimum learning environment.

4) It is often clear early in a ten-week term that a student's learning ability is minimal, and that his vocational goal is therefore unrealistic. It would be more humane if action could be taken on this information as soon as it is apparent.

5) Related to #4, if students are not informed of their learning prospects and limits early, or if they are allowed to spend considerable time in the program with an unrealistic goal, they tend to see themselves in the academic stream, with High School (or beyond) as the goal. If this is not realistic, it should not be encouraged.

6) Students sometimes complete a program with minimal skills, based on persistence and the fact that no clear decision was reached about the suitability of the goal they were pursuing. These students often have great difficulties in later courses, leading to disillusionment and eventual disappointment.

The link between student goals and the format of instruction appeared here. As indicated in item six, students whose goals require further training should, it was stated, be fully (not minimally) prepared to succeed. Experience had shown this was often not the case, and that poorly prepared students were thus frustrated and defeated in subsequent training, both they and the program suffering as a result. A call was made here for more effective preparation of each individual student sent on, a call, in effect, for a form of individualization. At the same time the importance of the goal itself was diminished, replaced by emphasis on the assessment process in which each student would be allowed an adjustment period and time to reflect on his aspirations, under the guidance of instructional staff.

For High School staff, both changes on the final questionnaire reflect more agreement related to individualization and alternative delivery modes, items which had been less acceptable initially. Perhaps this change reflects the influence of the curriculum consultant, who had been discussing some of these issues with groups of instructors in the High School program. Whatever the reason, the change is very marked.

The RNA staff also showed only two changes. On the question of whether individualization had been adequately tested they now thought it had. (To the researcher's knowledge no special projects had been undertaken in the interval between the questionnaires to test individualization in the RNA program. Paired with the responses to items 1 and 19 the view of RNA staff regarding individualization is clear: most students would both choose and benefit from some individualization of the curriculum. Apparently, instructors felt more strongly that these conclusions had been soundly reached and that previous experiments had been adequate.) On the other item instructors on the second questionnaire felt they might have a major voice in determining the use of computers in the program, after all. As noted in chapter 4, an inservice program had been developed to acquaint staff with the computers in the institution. The more optimistic outlook on this item may have been a reflection of the success of this program.

Comparison of Staff and Expert Views on Selected Curriculum Concepts

Andragogy

In chapter 2 (pp. 24 ff.) andragogy was defined as the philosophy of adult education which recognizes the adult's need and capacity to be self-directing, to utilize his experience in learning, to identify his own readiness to learn, and to organize his learning around life problems (Knowles, 1978:54). Questionnaire items related to individualization, alternative modes of instructional delivery, and student control and responsibility for learning are related to the concept of andragogy.

As noted in the previous section, all three staff groups were positive toward the principle of individualization of instruction and alternative modes of delivery, and all rejected the suggestion that individualization had been adequately tested in the program already, but support was limited to "special needs" students. The Questionnaire Analysis Panel showed strong instructor preoccupation with the needs of those students who require guidance and externally imposed structure -- those who have personal as well as learning problems. The Panel felt that different structures are needed to address these problems, including formal structures such as would be available in the proposed Learning Resource Centre, but that these alternatives would be for a minority of students who would be identified by instructors as requiring special help for their special needs. While it is acknowledged that some "regular" students could and would elect alternatives in order to work ahead and finish their upgrading program sooner, it is also apparently assumed that these independent, self-directed learners would be a small minority. It was not thought possible for students who lacked self-direction to learn to be more independent.

Regarding course content the High School members of the Questionnaire Analysis Panel cited their concern with adhering to Department of Education standards for credit courses, and preparing students to write various achievement and proficiency examinations, while ABE instructors were more concerned with the andragogic principles of curriculum organized around the students' life problems and experiences.

Mastery Learning

The major principles of the mastery learning model dealt with by the questionnaires and the Questionnaire Analysis Panel are contained in the instructional methods items. The issues of student capacity for self-direction and individualized instruction also contributed.

Regarding instructional methods some members of the Questionnaire Analysis Panel had strong opinions about the need for regular instructor-student contact, instructor direction of student learning, and the classroom/group learning experience for all students. Instructor-directed learning was defended as the teaching method of choice, with "alternatives" such as individualized instruction, instructional modules, the Learning Resource Centre and others reserved for the minority of students who progress significantly faster or slower than the average. Group learning conditions were thought to be adequate for most students, more economical of instructor time because less preparation of materials is required, and more complete because of the classroom peer interaction which was thought to be lacking in the mastery model.

As noted earlier, other instructor views affecting attitudes toward the mastery learning model include skepticism about most students' capabilities for monitoring their own learning, including practice requirements, productive use of time, and needs for further help. What acceptance there was for the mastery model was limited to students with special learning needs and capacities.

Developmental Studies

Various developmental studies authorities cited in chapter 2 (pp. 38 ff.) supported mastery learning conditions and such andragogic principles as the provision of choices to students about the content and form of their learning. These were thought beneficial for all students but particularly for "high risk" adults in remedial programs. It was clear from the discussion in chapter 2 that developmental studies emphasizes the adult student's growth toward more maturity and independence, as well as his greater academic competence.

The questionnaires showed plainly that most instructors do not credit the majority of students with the capacity to be responsible for their own learning or, even, with the capability of learning to be more responsible and self-directed. As a result the conclusion was reached earlier that, to the extent that instructors do not accept students' needs to exercise or learn self-direction in learning (as in other parts of their adult lives), the Academic Upgrading program's philosophy of education cannot be described as andragogic.

At the same time it is clear that instructors do believe greater maturity and responsibility should be outcomes of the students' experiences in upgrading. As revealed by several comments of the Questionnaire Analysis Panel, however, they believe that greater adult responsibility is achieved by students who discipline themselves to attend classes regularly and punctually, follow directions well, and do their assigned classwork conscientiously. Such self-discipline and compliance with external authority are thought to engender self-direction. While this is the result for some students there are signs that high levels of external regulation precipitate instances of what would have to called childish behavior in some students (see the ABE English instructor's account of her student's legerdemain with their homework, pp. 179 ff.).

In general, staff do not appear to agree with developmental studies authorities on the kind of learning environment which promotes increased student self-direction and independence, but they do accept the need for special alternative learning modes for high-risk students with learning needs not met in the traditional classroom. As noted earlier the Learning Resource Centre is seen as potentially suited to the needs of those students who, though hardworking, are falling behind the classroom pace.

Summary of Conclusions Related to Research Question #2: Views of Instructors Compared with Views of Experts Regarding Curriculum and Instruction for Adults

The questionnaires, the Questionnaire Analysis Panel, and the interviews provided evidence for the following conclusions about the differences between staff and expert opinion on the instructional needs of ABE students.

1. Andragogy. Some instructors regard ABE students (especially those at the lower academic levels) as incapable of self-direction or of exercising important choices about their learning. There is agreement that some exceptional students (including those with marked learning problems) might benefit from individualized learning opportunities such as those planned for delivery through the Learning Resource Centre, but for the majority of students staff saw little capability or desire for learning conditions based on andragogic principles.

2. Generally, learning materials are chosen in the ABE program for their adult content and style. In the High School materials from the public school curriculum are

routinely used.

3. Mastery Learning. The principles of mastery learning, including provision of clear objectives, flexible amounts of time for learning, and frequent opportunities for feedback and correctives, are regarded with skepticism by some instructors. Reasons include the difficulty of providing quality materials, the problems of monitoring students working at different paces and different places in the curriculum, and the suspected inability of students to manage the independence this learning model implies. There are also concerns that an individualized learning model might prevent student-student and student-instructor interaction, regarded as a central component of the learning program in the institution.

4. Staff agreed with expert opinion on the need for and usefulness of individualized instruction for some students. A minority of students whose special or unusual needs can not be met in the regular classroom are considered appropriate candidates for alternative learning modes.

5. Developmental Studies. Instructors generally did not accept the position of developmental studies experts that students require mastery learning conditions and an andragogic learning environment to develop greater independence, self-directedness, and feelings of control over their lives. Instructors tend instead to favor a learning environment which provides a great deal of structure for most students, and

which limits choices, but which can be made more flexible for some (i.e., those with unique or unusual learning requirements) through facilities such as the Learning Resource Centre.

Chapter 7

EFFECTS OF PARTICIPATION IN THE PILOT PROJECTS ON INSTRUCTORS' VIEWS

Introduction

The surveys described in chapters 5 and 6 furnished an assessment of the discrepancy between conditions as they existed and as staff thought they ought to be in the Academic Upgrading program, and gave some idea of instructors' views of expert opinion as a source of guidance in curriculum matters. Further contact between the researcher and various staff in different parts of the program resulted in expressions of interest from some instructors in participating in curriculum revision experiments of some sort.

The researcher responded to these expressions of interest by meeting with the interested instructors to discuss what might be done. If an area of need was identified it was described in a brief "Needs Statement" agreed upon by the researcher and the instructor involved (Appendices K, L, and M contain examples of these). If it was decided that an experimental pilot project would be conducted the researcher and instructor then agreed to a sharing of the work involved, and a timeline (See Appendix J for an example). At the conclusion of the experimental pilot projects participating staff were interviewed (Appendix D) in order to provide answers to the third research question:

> What are the views of instructors and administrators who participate in curriculum development projects during the course of the study regarding the value of the curriculum products to students, and the value of the curriculum development process to themselves?

Findings of the Initial Interviews and Questionnaire Which Influenced Development of the Pilot Projects

On the basis of the initial questionnaire and interview findings it was concluded that experimental curriculum development projects employing individualized mastery learning conditions and alternative delivery modes would be timely. These projects might employ a computer component if steps were taken to clarify some questions about the role and limitations of the technology. The goal of the projects would be to test some curriculum theories in practice, and to involve instructors in the development and testing process. It was concluded that the projects considered for experimentation should not admit "non-standard" learners, such as parttime students, but might include students regarded as having special learning requirements which were not met in regular classroom instruction.

Some further limitations on the pilot projects were derived from analysis of staff opinions within the six areas of the questionnaire. In the first area, Individualized Instruction, it was clear that some staff harboured major reservations about individualized instruction, related to fears that students would become isolated and that group interaction would not occur. The pilot projects would have to address these fears.

It was planned that misgivings about clerical overload for instructors would be addressed by the use of the computer as a management and recordkeeping tool (computer-managed instruction). Students' views and achievements would also be monitored in order to determine how various students fared and what they liked and disliked about their experience with individualized instruction.

In the second area, Alternate Delivery Modes and Teaching Methods, the conclusion was reached that staff presently had different experiences with alternate delivery, and these were reflected in many of their misgivings and reservations. Rogers (1962) had noted that trials of innovations helped to accelerate the adoption process for innovations. Curriculum experiments were therefore to attempt to involve as many staff as possible in the trials of individualized methods, if not as actual participants then as observers, to provide staff with experience upon which to base their judgments in this area.

In the third area, Innovation and Change, there was evidence in the questionnaire that instructors were satisfied with past practice, except for curriculum planning and evaluation. The proposed curriculum changes were therefore to take special care to make planning and evaluation elements clear, and to subject these to scrutiny by participating staff. Suggestions of participants were likewise to be given careful attention.

In the fourth area, Computers, instructors expressed concern about several implications they say in computer-based education which they felt had not been vetted adequately with them. At the same time, however, there was considerable curiosity about computers, and a feeling they could be used beneficially somehow in the program. Because staff were unhappy with the lack of a policy on computer-based education for the institution, and in view of their uncertainty about their role vis-a-vis computers, the proposed pilot projects were to use the PLATO computer system only as a management tool, a role which, it was felt from the interviews, would be relatively uncontroversial and straightforward. At the same time, staff were to be invited to personal demonstrations of the computer's role in the project. (In the course of the study, twenty-four such demonstrations were given to thirty-seven different instructors from throughout the institution.)

The fifth area, Students' Learning Attitudes and Preferences, produced these conclusions: students were not thought to be capable of managing their time without guidance, and instructors felt uncertain of students' abilities

to monitor their own learning needs. Therefore, each pilot project should maintain the usual classroom schedule of contacts between students and teachers, but should use these contacts in novel ways. The pilot projects were thus to help instructors see a new role for themselves, and more self-directed behavior from their students.

Finally, the Curriculum Development section of the questionnaire revealed disappointments with some present curriculum development procedures in the three departments. It was therefore decided the intent of each pilot project should be communicated carefully to staff, and that opinions of those who voluntarily participated must be given weight. The researcher served as curriculum developer and change agent, and monitored staff reactions through formal interviews and informal discussions.

The Adult Basic Education Mathematics Pilot Project

Synopsis of the MFDO Pilot Project

The ABE program's remedial Fractions and Decimals course for ongoing students (MFDO) was the first chosen as a pilot project in curriculum redesign. The course had been initially offered in the spring of 1982 for students who had failed the Math Fractions and Decimals (MFD) Final Exam, or

who had done poorly in previous math courses and were therefore thought to require a "slower" exposure to MFD.

The following were the major reasons for selecting MFDO for the initial pilot project:

1) Awareness of need. The instructor of the MFDO course, which had been offered in April to June, 1982, in the traditional/conventional manner, was aware that it did not provide flexibility for students who had already failed such a course once before. The remedial course was simply "repeating the same things louder and slower" (Gregorc, 1982). The instructor expressed interest in a curriculum revision project intended to make the MFDO course more responsive to individual students' needs by the provision of mastery learning conditions.

2) Environmental assessment. There were several other instructors besides the MFDO instructor who expressed interest in curriculum change in the ABE program. While opinions varied about the nature of the need and the form changes should take, the environment in the ABE program generally appeared tolerant of, and even conducive to, a pilot project incorporating mastery conditions in a course such as MFDO, which was already intended for special needs "high risk," developmental studies students.

3) Inertia assessment. The concept of a pilot project with an instructor who had volunteered his participation suggested the presence of high levels of impetus for change.

Among staff as a whole, those reservations which existed appeared frequently to be based on misconceptions about the mastery learning model, a state of affairs which seemed to indicate that the true inertia potential of this model of learning would not be known until an accurate demonstration of it had been provided.

After the decision to use the MFDO course for the initial pilot project, the researcher and the instructor of the course agreed to a schedule of activities for the summer of 1982. The researcher was to develop draft versions of the materials for the fractions portion of the course only, including paper-and-pencil instructional modules and PLATO-administered tests and drills, which the instructor would review when he returned from his holidays in August. (The decimals portion of the course, it was agreed, would be developed during Term 1, September to November, 1982.) The formative evaluation of the newly developed materials was completed by the end of August and the materials were collaboratively judged to be suitable for the pilot project beginning with Term 1.

To assess student attitudes toward the revised course a Student Survey was administered at the beginning and end of each ten-week term throughout the year (Appendix R). Also, interviews were held with randomly-selected students at various points in the first two terms. (Results are presented below.)

During the initial term (September to November, 1982), changes were made to the materials and procedures frequently as a result of consultations between the researcher and the instructor. At the same time, the decimals portion of the course was developed for use beginning in Term 2 (November, 1982, to January, 1983).

In Term 2 a second section of the MFDO course was opened to accommodate increased student enrolments. This required orientation of a new instructor and revision of some procedures, chiefly to allow more student access to PLATO. Again, the Student Survey was administered and, in December, a random sample of MFDO students from both sections was interviewed in depth about their experiences in the course. At the end of Term 2 a mid-point evaluation of the MFDO course, by means of an interview with both instructors, was conducted.

In Term 3 one class continued to be student-paced while the other employed somewhat more instructor direction, for reasons explained in the mid-point interview, below. The researcher visited both classes twice during the term and performed a modified Flanders Interaction Analysis (Flanders, 1971) to assess the differences more closely. The categories employed in the modified analysis were:

1. Teacher Activity
    1.1 Indirect
        1.1.1 Accepts students ideas, responds directly to students
        1.1.2 Praises, encourages, jokes

        - 1.1.3 Questions an individual or the class
    - 1.2 Direct
        - 1.2.1 Lectures
        - 1.2.2 Gives directions
        - 1.2.3 Criticizes
- 2. Student activity
    - 2.1 Answers or responds to a direct or indirect teacher activity
    - 2.2 Initiates questions or discussion voluntarily
    - 2.3 Works individually or in cooperation
    - 2.4 Silence, confusion

The analysis showed the MFDO principal instructor (PI) providing one hundred percent indirect activity, on both occasions, while students worked individually or in cooperation with one another. The second MFDO instructor (SI) conducted a group lecture for approximately one-third of the fifty-five minute period, and permitted individual work for the remaining time. (For comparative purposes, the researcher also visited a regular MFD class taught by the principal MFDO instructor. In that class he averaged sixty percent group lecture, and forty percent individual work.)

In Term 4 only one section of MFDO was needed to meet enrolments and it was taught by the principal instructor using the mastery model. At the beginning of the last term, both instructors participated in extensive interviews as part of the final evaluation of the pilot project. These interviews were conducted individually.

Student Achievement in the MFDO Pilot Project

Student achievement was determined from MFD Final

Exam results, for the last two terms of the 1982 - 83 academic year (February to June, 1983). As was noted in chapter 3, all MFDO students had failed the MFD Final Exam before being placed in MFDO for an additional ten weeks of preparation. Table 17 shows a comparison of MFDO students' scores from the first to the second attempt at the Final Exam, the second coming at the conclusion of ten weeks in the MFDO course. (MFD students' scores from the same period are provided for comparison.)

Table 17: MFD Final Examination Results

Term 3	January, 1983			April, 1983		
	N	Mean	S.D.	N	Mean	S.D.
MFDO	23	36.7%	8.7	27*	55.9%	17.1
MFD	--	--	--	68	66.9	19.9
Term 4	**April, 1983**			**June, 1983**		
MFDO	18	38.5	14.6	20*	49.6	23.2
MFD	--	--	--	55	59.2	17.9

*Some MFDO students had not written the Final Exam previously.

Obviously, the weaker MFDO students had remained weaker than the MFD students, even after ten additional weeks of preparation for the Final Exam. However, MFDO students did make substantial gains on their second attempt -- an average improvement of about thirteen percent. This suggests that further time in the MFDO course might be beneficial for at least some of these students. (Other data to be presented suggest an opposite conclusion, however; see below.)

Another measure of student achievement and, perhaps indirectly, of the MFD Final Exam, was the pass/failure rate for all students writing it in these two terms. Table 18 (p. 251) shows data on student failures (i.e., scores below sixty-five percent).

Clearly, the MFD Final Exam was challenging to all students, with almost half of MFD students failing it. Not unexpectedly, the Exam proved difficult for MFDO students even after their second ten weeks of preparation. There was improvement, however: one-third of MFDO students did pass the Final Exam, with scores statistically indistinguishable from those of MFD students who passed on their first attempt.

Summary. Without minimizing the fact that the majority of MFDO students clearly still have much to learn about fractions and decimals, in the spirit of the mastery learning model it is possible to argue that, like the proverbial hockey team, some of them did not lose, they ran out of time. Given their poor academic antecedents these students could have been expected to continue to do poorly. Bloom (1976:70) notes that remediation is less helpful the

Table 18: **Pass/Failure Rates, MFD Final Examination (February to June, 1983)**

	Total n	Number of Failures	Percent Failing	Mean of Failing Scores		Number Passing	Percent Passing	Mean of Passing Scores
				First	Second			
MFDO	47	31	66%	37.5%	42.1%	16	34%	73.9%
MFD	123	58	47	45.0	---	65	53	76.9

later it is provided, because morale suffers as negative experiences accrue. These students had had the dubious benefit of ten weeks of MFD instruction, after which some of them scored as low as seven percent on the Final Exam. (In fact, twenty-one of the forty-seven MFDO students scored less than forty percent on the Final Exam the first time they attempted it.) Yet at the end of MFDO one-third of them passed the demanding Exam with scores as high as those in the regular MFD course who passed on their first attempt.

Students learned more than how to pass the MFD Final Exam, however. In the following discussion of student attitudes this aspect of the MFDO course is explored.

Student Satisfaction in the MFDO Pilot Project

Student satisfaction with the revised MFDO course was assessed by means of a Student Survey (Appendix P), and by interviews.

The Student Survey. The Student Survey addressed the questions of student confidence in learning math (items 1, 2, 4, 6, 8, 9, 10, and 11), and of preference for various learning conditions or procedures (items 3, 5, 7, 12, 13, 14, 15, and 16). In the following discussion, survey results from Terms 3 and 4 (February to June, 1983) are considered.

Table 19 shows the results of the Student Survey for MFD and MFDO students.

Table 19: Student Survey Results, Terms 3 and 4 Combined (February to June, 1983)

Questionnaire Item	MFDO Pre-Survey (n=47) Mean	MFDO Pre-Survey (n=47) S.D.	MFDO Post-Survey (n=34) Mean	MFDO Post-Survey (n=34) S.D.	MFD Pre-Survey (n=83) Mean	MFD Pre-Survey (n=83) S.D.	MFD Post-Survey (n=57) Mean	MFD Post-Survey (n=57) S.D.
1. I usually do well in math.	3.09	1.01	2.85	1.08	2.74	.91	2.26	.96
2. Math is easy for me.	3.52	.86	3.18	.87	3.17	.94	2.63	.99
3. Math is useful.	1.85	1.05	1.65	.81	1.54	.61	1.53	.68
4. I usually learn new things as fast as most people.	3.13	.96	2.82	1.00	2.54	.83	2.35	.69
5. In class, I can usually get help whenever I need it.	2.32	.79	1.88	.95	2.22	.90	2.00	.89
6. I don't like other people seeing my mistakes.	3.15	1.23	2.94	1.01	3.11	1.00	3.05	.97
7. I can learn faster on my own than in a group.	2.96	1.01	2.82	1.19	3.17	1.06	3.19	1.04
8. I learn math more easily than I learn other subjects.	3.78	.99	3.00	1.30	3.12	1.14	2.56	1.00
9. I usually know whether or not I am doing well in a course.	2.26	.80	2.29	.94	2.47	.82	2.16	.70
10. I usually do well on tests.	3.02	.93	3.00	.74	3.04	.80	2.67	.81
11. I am usually nervous when I take tests.	2.37	1.14	2.15	1.11	2.36	.97	2.23	.96
12. I like learning in a group more than learning on my own.	3.09	1.13	2.94	1.28	2.78	1.00	2.75	1.07
13. I believe that tests are a fair way of telling how much I know about a subject.	1.94	.95	1.91	.97	1.80	.75	1.79	.84
14. I usually do better on assignments than on tests.	2.41	.83	2.32	1.07	2.46	.82	2.32	.81
15. I like a lot of tests in courses.	2.94	.88	2.59	.96	3.27	1.03	2.61	1.10
16. Tests help me know how well I am doing in a course.	1.85	.99	1.77	.96	1.93	.73	1.83	.74

Rating scale: 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree

On items related to confidence, MFDO students remained undecided, though they moved toward more agreement about whether math was easy for them (item 2), whether they learned math more easily than other subjects (item 8), and whether they usually did well on tests (item 10). They moved from indecision to agreement that they usually did well in math (item 1), that they didn't like other people seeing their mistakes (item 6), and that they usually learned new things as fast as most people (item 4). And they increased their initial agreement that they usually knew whether or not they were doing well in a course (item 9), and that they tended to be nervous when they took tests (item 11).

In comparison with MFD students, significant differences emerged on four items*, shown in Table 20. The MFDO group was initially less confident than MFD students on all four items, showing negative/undecided ratings on each. After completing ten weeks in their respective Fractions and Decimals courses, both groups were more positive than they had been, with MFDO students now recording agreement on two of the four items, and exact indecision on a third. Thus,

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*The statistic for significance is a two-tailed test (Spiegel, 1961:169), with z scores given by:

$$z = \frac{\bar{X} - \mu}{\sigma / \sqrt{N}}$$

Where: $\bar{X}$ is the sample mean,
μ is the population mean,
σ is the standard deviation of the population, and
N is the size of the sample.

Table 20: Significant Differences Between MFDO and MFD Students on the Student Survey

Questionnaire Item	Pre-Survey				Post-Survey			
	MFDO (n=47)		MFD (n=83)		MFDO (n=34)		MFD (n=57)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. I usually do well in math.	3.09*	1.01	2.74*	.91	2.85*	1.08	2.26*	.96
2. Math is easy for me.	3.52**	.86	3.17**	.94	3.18*	.87	2.63*	.99
4. I usually learn new things as fast as most people.	3.13*	.96	2.54*	1.00	2.82*	1.00	2.35*	.69
8. I learn math more easily than I learn other subjects.	3.78*	.99	3.12*	1.14	3.00**	1.30	2.56**	1.00

*Significant beyond the .01 level of confidence.
**Significant beyond the .05 level of confidence.

both groups came to agree that they usually did well in math, and that they learned new things as fast as most people; further, MFD students concluded that math was easy for them, and that they learned math more easily, in fact, than other subjects.

On items related to students' preferences for learning no differences were observed between the two groups. On these eight items the students either increased or did not change their agreement that: math is useful (item 1); they got help in class when they needed it (item 5); they learned faster on their own than in a group (item 7), but that they liked learning in groups better than on their own (item 12); that tests were a fair way of telling what they knew about a subject (item 13); that they usually did better on assignments than on tests (item 14); that they liked a lot of tests in their courses (item 15); and that tests helped them know how well they were doing in a course (item 16).

Finally, when pre- and post-survey results were examined separately for each group, within-group differences were found as shown in Tables 21 and 22. For MFDO students these results indicate that the classroom had not been an isolating experience, at least in so far as obtaining help was concerned, and that their appraisal of their success in learning math, as compared with learning other subjects,

Table 21: Significant* Changes from Pre- to Post-Survey, MFDO

Questionnaire Item	Pre-Survey (n=47) Mean	Pre-Survey (n=47) S.D.	Post-Survey (n=34) Mean	Post-Survey (n=34) S.D.
5. In class, I can usually get help whenever I need it.	2.32	.79	1.88	.95
8. I learn math more easily than I learn other subjects.	3.78	.99	3.00	1.30

*Both differences significant beyond the .01 level of confidence.

Table 22: Significant* Changes from Pre- to Post-Survey, MFD

Questionnaire Item	Pre-Survey (n=83) Mean	Pre-Survey (n=83) S.D.	Post-Survey (n=57) Mean	Post-Survey (n=57) S.D.
1. I usually do well in math.	2.74	.91	2.26	.96
2. Math is easy for me.	3.17	.94	2.63	.99
8. I learn math more easily than I learn other subjects.	3.12	1.14	2.56	1.00
9. I usually know whether or not I am doing well in a course.	2.47	.82	2.16	.70
10. I usually do well on tests.	3.04	.80	2.67	.81
15. I like a lot of tests in my courses.	3.27	1.03	2.61	1.10

*All differences significant beyond the .01 level of confidence.

improved substantially. MFD students felt more strongly that studying math was an easy and successful experience, and that they approved of the testing in the course.

Summary. In total, the Student Survey shows that both MFD and MFDO students became more positive over the ten week term about their prospects for succeeding in math, though MFDO students understandably showed somewhat less confidence and enthusiasm. Specifically, students approved of the way testing was done in the course, and of the availability of help. As will be seen in the next section, these views were elaborated further in the student interviews.

The Student Interviews. During the first two Terms (September, 1982, to January, 1983), brief interviews were conducted by the researcher at the middle and end of the term with all students in the revised MFDO course. The purpose of these interviews was to determine whether any pressing problems had arisen, in order to make immediate corrections, if required. If students reported no such problems, but had suggestions for future changes, these were recorded and discussed with the MFDO instructors at a later time. Three questions focused these brief discussions:

1) How do you feel you are doing in the math course?
2) What is the hardest part of the course so far?
3) Do you have any questions, or suggestions for improvements?

Results of these interviews showed positive feelings about the course, and few complaints or unexpected sources of difficulty. In order to provide a clearer picture of student views, a series of detailed interviews was held with twelve students randomly chosen from the two sections of MFDO which existed in December, 1982. The interviews were taped and transcripts made of seven of these for detailed study. (The reader is referred to Appendix S for an example interview with one of the more interesting students encountered during the study.)

The questions used in the extended interviews were as follows:

1) What is it like being a student at AVC?
2) What kinds of things have happened so far in your classes that have surprised you?
3) What are your goals? Have they changed at all?
4) What is the hardest part about being a student?
5) What do you like best about AVC?
6) What things about AVC would you change?

These questions were obviously intended to survey opinion about other topics besides ABE math. In fact, the purpose was to provide students with an opportunity to comment freely on their experiences at the institution, and to see if the math experience would be mentioned without direct prompting. It was also hoped that students would reflect on their general educational histories, to provide information on their curriculum preferences and aversions.

A number of student observations had pertinence for curriculum, and instructional practices generally. GH had been confined to a wheelchair as a result of an accident several years before. He commuted to classes in his van, from his own apartment. These were his thoughts on some problems he was encountering.

Q. What's the hardest part about being a student here?

A. The thing I don't care about with my classes is we don't have a lunch break.

Q. Hmm. What's your schedule like?

A. My schedule starts at 11:30 in the morning and goes straight through to 3:30. We have one break in the afternoon.

Q How much of a break do they give you?

A Fifteen minutes.

Q If you had your choice, how would you like your day to be?

A Oh, I would say, maybe start around 10:00 and stop around 2:00 or 2:30.

Q Okay. And what kind of a break?

A Oh, I'd say a half hour break. See, that gives me time to get upstairs in the elevators. There's an awful lot of students in the school and the elevators . . . . By the time you get to an elevator, I mean, your class it about to begin again.

The unremitting schedule was depriving GH of the social interaction he hoped to have as part of his upgrading experience. It is also ironic that an institution designed to meet handicapped students' needs in many physical respects was placing this student under considerable stress as he faced four hours of classes without so much as the time to take a coffee break outside of the classroom.

Other than this, GH was content with his progress, noting some changes in himself as a mature student.

Q. Just looking at your schedule now, what's your best subject?

A. I would say math.

Q. Okay. Has that always been true?

A. No, math was my worst subject.

Q. Why the difference?

A. I've taken an interest in it now, where I didn't before. And it's really improving.

Q. What's caused you to take more interest?

A. Well, I guess when I was going to school I wasn't really mature and now I am and now I see that I need my schooling.

Q. How is the math class? Are you enjoying it? Are you getting anything out of it?

A. I'm enjoying working with PLATO.

Q. What do you like about it?

A. Because I've accomplished quite a bit. I've only got, I guess, five more lessons to go before I'm through with it.

Q. How about the other part of your class, the classroom work?

A. It's good, too. I like it. English is good, too.

All I'm taking is English and math. And I guess English is what I really need. And so, uh, once I get my English down . . . . It's coming slow but sure. We haven't had an exam yet, but I figure I'm doing pretty good in it.

Q. If you could change anything about any of your classes, what would you change?

A. Maybe, that we would have a longer break. Not a lunch break but more or less a half hour coffee break, where I could get up there. But that isn't that bad because I send . . . I give somebody some money to get something for me. But other than that I don't think I'd change anything.

IG is a mother of two school-age children, who was in her third attempt at upgrading at AVC. She had terminated early from the ABE program on two previous occasions because of family problems. She spoke about her determination to succeed, and the problem of homework.

Q. Okay, so you've been here and been away and been back a few times. How is it going this time?

A. This time I enjoy it a lot more.

Q. Why is that? Why is it better this time?

A. Well, I guess I just finally made up my mind.

Q. Okay.

A. To get through.

Q. The other times you were . . . .

A. Well, I had some personal problems and some medical problems.

Q. Okay. So this time everything seems to be going well?

A. Yeah.

Q. Good. What's the hardest part about being a student?

A. Myself, having children, not being able to do the homework, I guess. I have to get it done here. I can't take any home.

Q. Do you manage to get it done here?

A. Yes. I get an hour before this class, and half an hour before my English.

Q. So by using your time pretty carefully you're able to get it done.

A. Usually, yes.

The problem of studying at home was frequently mentioned (see TK's fascinating account, below), and homework formed the single most frequently mentioned problem for students. (This is not a new problem. In the McKay study (Evaluation Consultants Ltd., 1982:6) home study problems were mentioned by thirteen percent of students interviewed.) Yet, as noted by members of the Questionnaire Analysis Panel (chapter 6), homework was expected of students in both the ABE and High School programs. Clearly, there is a problem related to these expectations.

IG was positive about her math class, despite the homework problem.

Q. Let's talk about this course for a minute, the math course. What do you like or dislike about it?

A. This math class is my favorite class.

Q. What do you like about it?

A. I guess the instructor, I suppose.

Q. What do you like that he does?

A. Well, he lets you go at your own speed, and he's there willing to help you all the time.

Q. So you can get help when you need it?

A. Uh-huh.

Q. How often do you need help from the instructor?

A. When I start something new, like when I started Fractions, quite a lot.

Q. Were the modules any help? The colored-paper modules?

A. Oh, yeah, they were really helpful, too.

Finally, IG's motives for returning to school indicate that "readiness" may be a factor for adults, too.

Q. What was the thing that was in your mind in coming back to school? What motivated you to come back?

A. Well, I was just kind of tired of staying home, and I just wanted to be independent, you know?

Q. If someone were to ask you about AVC, what would you say about it? If someone didn't know anything about it, what would you tell them?

A. Well, I'd tell them first of all they have to make up their mind if they're going to go through with it or just, you know, like I was at first. You know, like, really think about it. (Pause). It's a good thing, you know. If you really want to do it.

TK was an immigrant to Alberta from the Maritimes and, in middle age, was struggling with parts of the ABE program. She retained a sense of humor about her experiences, however, as well as insight and common sense.

Q. How is it coming back to school as an adult? How are you finding it?

A. I like it. You know, some of the things I'm after learning and over the years since I was out of school I had experienced it. Now that I'm back in school I find it much easier. And some things I know that I didn't know before. Like, the kid says, "Oh Dad, we should have sent her to school a lot sooner." You know, they poke fun, like. But I do, I like it.

Q. That doesn't bother you, when the kids say that?

A. Oh, no.

Q. Good. What's the hardest part about being a student?

A. Homework! Because sometimes when they give you . . . . Say they give you a sheet. And, okay, when you get home the first thing you've got to do is get supper. Then you've got to make your beds, because I don't do it in the morning. And then you watch . . . . And then while you're doing that you get the kids down to their homework and you get down to yours. And in the middle: "Mom, PJ's got this." Then you got to get up and you got to solve that and then you got to go back again. And then if someone downstairs is blowing horns, or doing their music lessons or something . . . . And then she'll be yelling, "Put that knife down!" So then you got to get up and . . . . So it's hard when you're trying to do homework.

Q. So you find the homework is a real problem?

A. The point is, say if they give you something. Now I missed out my Science sheet because I missed a day. And so she gave it out. I got it yesterday. Now, she wanted it all completed for today. And it was about that thick. Plus then you got Physics to do and then you got your blue sheets, you know, that metric stuff.

Q. So there's just sort of a lot of it.

A. Only for that I'm okay, you know.

Two problems arose for TK: getting the work done at home, and getting it done on time when she had missed a day. A more student-paced schedule would have helped her cope with both demands.

DL was seventeen at the time of the interview, and had been a student at the institution for over a year. He had been raised in a remote part of the Province and had simply not been sent to school as a child. For him, motivation and guidance were self-confessed priorities.

Q. How do you like this system where you work on your own?

A. It's not too bad, but . . . it's good to have a teacher around.

Q. When you need the teacher you're glad he's there?

A. Yeah. Or I'd be stuck, sort of.

Q. How do you feel you're getting along? Are you going fast enough? Keeping up a good pace?

A. Hmm. I think I'm a little bit . . . . I should be going a little faster.

Q. You think you're capable of going faster?

A. Yeah.

Q. What's holding you back?

A. (Pause). Kind of hard to explain that. (Pause). I don't know.

Q. Is it a problem of some kind?

A. I don't think so, no.

Q. Need someone to give you a push?

A. Yeah, probably that would be about it. (Pause).

Other students mentioned the instructor's presence and willingness to help as assets, but DL seemed to represent those students who had yet to learn even minimal habits of self-direction. He may have been an extreme case, however:

Q. Your goal is mechanic? Is that giving you any kind of a push? You know, the sooner you get out of here the sooner you'll be off . . . .

A. Yeah, I'll be starting at Keyano College.

Q. Right. You want to go up there and take it . . . ?

A. Yeah. That's where I'll be taking it.

Q. Are you anxious to get into it?

A. Not . . . too much, no. (Pause). But I'd like to have it over with, anyway.

While most students show more motivation than this, the problem of fostering greater independence and self-direction for all students is one which ABE instructors find perplexing, as the staff interviews and the Questionnaire Analysis Panel showed. Some andragogy-oriented instructors are of the opinion that simply teaching math or English to students like DL, without attending to their increasing maturity and self-direction, is inadequate. Certainly, there is strong feeling that graduates of the Academic Upgrading program should have both greater skills and better adult functioning abilities, and that the curriculum must begin to address these needs more systematically.

Summary. The interviews revealed student thinking on several features of the instructional program. First, the simple pattern of class scheduling produced physical problems for some students when, for example, no time was provided for breaks or socialization outside of class. This is particularly notable as instructors had identified isolation of students as an outcome they feared in individualization, and had spoken often of students' needs for contact with one another. For all students, then, but especially for the handicapped, sufficient time should be provided for informal, out-of-class interaction with other students.

Homework, and the problem of meeting the expectations of school while maintaining a household, are a problem for students with families. Usually, these students do not find home conducive to extensive study, though some manage better than others. For those not managing, self-pacing would permit progress adjusted to opportunity for study and mastery, and would prevent both inadequate mastery and the guilty consciences plaguing some students.

A final negative finding reflects on the lack of growth in maturity and independence by some, often younger students, some of whom had been students in the ABE program for considerable time. The criticism is that these students are being taught facts and academic skills without learning adult behavior or habits of action. In fact, in some cases curriculum procedures abet the students' continued immaturity, requiring few decisions and making many allowances for repeated performance below potential. Instructors had themselves identified the problem, but addressing it has not appeared to be a priority. Young's (1982) advice is relevant:

> [Those in ABE programs need to] closely examine

> our objectives and determine whether we are simply producing unfunctional literates psychologically and socially unprepared for the rigors of a technological society or whether we are developing skills needed to cope with change. We need to determine if our ABE programs are just developing basic reading and computational skills or if they are developing also a knowledge of these skills related to and integrated into a plan that equips adults with basic social, economic, and scientific concepts as well as with attitudes and values which will help them in their personal development. (p. 22)

Her conclusion is particularly salient for curriculum development: "Instruction separated from application to meaningful problems is likely to meet with minimal success" (Ibid., p. 23).

More positively, students expressed high levels of satisfaction with their courses, their instructors, and their own learning. Few made major suggestions for changes to the institution, and many noted they were then comfortable in school for the first time in their lives. These findings are consistent with those of the McKay Study (Evaluation Consultants Ltd., 1982:4), where sixty-five percent of students reported they were "learning a lot," and twenty-three percent stated they "enjoyed school now."

Participating Instructors' Views of the MFDO Pilot

Introduction. Two instructors taught in the revised MFDO course. The principal MFDO instructor (PI), who had taught the course in the traditional/conventional manner in Term 4 (April to June), 1982, had expressed early interest in a curriculum redesign project. It was he who worked closely with the researcher in the initial stages of the revision process, who taught the MFDO course in all four ten-week terms in the 1982 - 83 academic year, and who was closely involved in the evaluation and revision process throughout the study. For two terms (November, 1982, to April, 1983), a second instructor (SI) joined the team, teaching a second section of the MFDO course made necessary because of increased student enrolments. He was included in all decisions formulated about the course during his involvement, and participated in the major mid-point evaluation interview which took place in January, 1983.

The Mid-Point Interview. The January interview involved the principal instructor, the second instructor, and the researcher. At the time of the interview, the principal instructor had taught the revised MFDO course twice, and the second instructor had taught it once. The interview was conducted in one session, was taped, and a transcript prepared by the researcher for correction by the other participants. (Neither instructor suggested any changes.)

The discussion was introduced by the researcher (Rscher) as follows:

> I would like to go through the elements of the course one by one and hear your comments about them Things like the tests, the modules, the problem solving units. Then we can free associate at the end, but somewhere I would like to pull out of this what would have to be changed to make this a more

> viable MFDO course, or a course for students who are having, or probably will have, trouble with regular MFD.

The discussion which followed addressed three major topics: 1) statements of personal philosophy or conviction about adult education, or about teaching remedial students in a course such as MFDO; 2) concerns related to particular elements of the MFDO course itself; and 3) comments regarding student behavior or response to the course.

The principal instructor expressed these views about the revised MFDO course, as compared with the original MFDO course he taught in April, 1982:

> I think that's the crucial difference: now it's student-paced. The complaint I had with the original MFDO was the material was different but you still had to take them through it at a very strict pace, if they were to learn it in ten weeks. So what we were doing is taking them through the same stuff again that was too much for them the first time, and would probably be too fast for them the second time, even if they did do a little better.

Rscher: So you were repeating it louder, if not slower.

PI: Yes, that's right.

He went on to elaborate on his feelings about the MFDO students, and the task of the revised MFDO course:

PI: Another thing here I find very difficult to accept -- I still can't accept it: fractions and decimals is not that tough. I refuse to accept that out of fifteen students, so many can't learn fractions and decimals. They're not stupid people. I've talked to them, they've got insights into many, many things. Why they have trouble with this is a mystery to me. But I think it's a mystery that should be solved. It's

> one of the things this school should be about. Why can't that person learn? What are we doing wrong? We have suspicions about what other systems do and why they don't work. We should be trying to find something that does work for those students. . . . I just think it's too simple to say people can't learn things. Because people can learn if the situation is right for them personally.
>
> . . .
>
> I don't think it would be practical to assume that we're going to take all math students and make them learn everything. Even if they wanted to, that isn't practical for everyone. However, I think there is enough evidence that we aren't doing all we can for the students we have in math or English -- I'm not just picking on any one department particularly. That we could do better is what we're trying to do.

The principal instructor was aware of the attention of other instructors to the MFDO pilot project, and expressed these thoughts about the others' expectations as compared with his own:

> My feeling is that the rest of the department is looking on this as a kind of pilot to see if it works. My view is not that. My view is that it works, and that this is a way of getting it started. That we don't have anything to prove because it has been proven over and over again by other people. This is simply the beginning, that it had to start somewhere, and this is a good place for it to start.

These comments showed clearly the principal instructor's strong convictions about the appropriateness of the "student-centered" MFDO course, both for students' learning and for their growth as self-directed adults. He demonstrated in his outlook the "developmental studies" attitude defined earlier by Roueche (1977), Roueche and Mink (1977), and

Moore (1976; 1980).

The principal instructor's observations about the faults of the regular math program did not go unchallenged, however. The second instructor made these comments about the effect of the revised MFDO course on students, from his point of view.

> Well, I think what is happening with the MFDO, in about ninety percent of the cases or more, is the results just confirm what we discovered the first time when we went through MFD the first time, and that is the students just don't have the ability to do it, in a lot of cases. So I guess what we're doing is providing an alternative which I guess we should do for those students to give them another opportunity in a different medium perhaps, and then I think basically what we're saying is we were right, you seem to be having difficulty with this, and perhaps we better look at another goal. I know that with the algebra I've been teaching for the past couple of terms we do allow the students to take it again a second time and the second time we say the same thing louder, and very often those students will score fifty percent or so the first time (which is a failure -- sixty-five is a pass mark.) The second time around they'll get a seventy or a seventy-five, and they'll get through the algebra, but they don't get through the Math 10 . . . .
>
> I think what we have to do is sit down and be sure the student understands that although they're setting the pace this time they're going to have to complete a certain amount of material by the time this term is over. Because if you expect to get through this you're going to be going into a class where you're going to be expected to finish a certain amount of work in a certain period of time. So, what we're doing here is not . . . . There's a problem with it in that we could send a student from this class into another class that wouldn't allow him to do this. If we could send them into another class that did, it would be much better. And that's all the way down the line. In High School they don't do that, at NAIT [Northern Alberta

> Institute of Technology], at Grant MacEwan [Community College], . . .
>
> . . .
>
> As I mentioned before, what I believe this has done is just confirmed what we knew before, that they're poor math students and they're going to be poor math students. They're not going to go much beyond the level they're at right now. Given all the time they want, probably they could get through this, given all the time that they needed. But we're just fooling them, because even if they did get through this they won't get through the others.

It is common, as noted in chapter 6, for staff to say of individualization, self-pacing, and other student-directed innovations that these have the negative effect of convincing students their learning potential is higher than subsequent experience is likely to prove it is. Rather than raise hopes falsely, the argument goes, students in Academic Upgrading should be subjected to the same inflexible learning conditions presumed to exist at other advanced education institutions. It might then not be necessary to counsel students away from overly-ambitious goals, since they may simply fail to achieve the necessary prerequisites for further training.

The principal instructor (and others who, as noted in the analysis of the interviews and questionnaire, dispute this reasoning) rejects this argument on several grounds, some of the more compelling of which were purely humanitarian. However, a purely educational (not in contradistinction to humanitarian, surely) argument against this view is derived from Bloom's (1976:2) distinction between classification/ selection of students, and their maximum educational development. Bloom had noted that a former function of public schooling had been "classification" of the best candidates for further education. One of the ways this was done was by emphasis in testing and grading on production of a good "normal distribution" of results. Often, the content of tests and instruction conspired in this classification/selection purpose, according to Eisner and Vallance (1974:23), by focusing on "pedantry": "the tendency of formal instruction to drift in the direction of teaching 'background knowledge' . . . ."

> Eventually pedantry gets welded into the requirements of the activity itself, so that you cannot pass an exam for a carpenter's license without a lot of miscellaneous knowledge that has no direct application to carpentry and is at best irrelevant.

Bloom confidently observes that schools world-wide have now recognized the injustice of this practice, and have moved from selection and classification to helping all students develop educationally as much as each individual is able (Ibid.). But some instructors and administrators saw the impulse toward the classification and selection of ABE students in some of the views voiced by the second instructor. The principal instructor, representing the opposite view, had no qualms about providing optimum learning conditions, and clear learning objectives, as free of pedantry as could be devised.

Concerns about the MFDO course itself centered chiefly on some of the tests, and on the lack of problem solving exercises in the instructional modules. The instructors noted this about the testing:

> **SI:** I thought the tests didn't have enough items. On some objectives there were only two items. I think that could be beefed up a little bit, because in my mind it doesn't reflect accurately the knowledge of the student. And that's the paper-pencil tests I'm talking about. On the PLATO tests, I'm not sure how accurate the results that were recorded are in indicating the student's actual ability. A couple of times I saw the students flipping back through their notes, while they were doing the tests. If indeed it says they've mastered something, have they in fact done that?
>
> . . .
>
> I think the Pretest was reasonably good. I don't have too many arguments with that. Especially students who had virtually nothing done. You could tell right away they would start from scratch. But I thought it should have been more challenging in the posttests and the comprehensive tests.
>
> **PI:** Yeah, I would concur with that. I don't see that the Pretest made many mistakes. It lets the student know where he begins. If there is an error there's enough overlapping to catch it.

Regarding problem solving, this was the comment:

> **SI:** Those modules that we're doing are coming along, but I'd like to see the problem solving, like in the Fractions, be a part of every module. As soon as you finish addition you have problems right there. And I think that should be a part of the objective tests, a part of PLATO as well. And also in the comprehensive tests, there should be problem solving there as well.

He added:

> When it comes to problem solving I don't think I've ever been pleased with the results of what I've done. I wish I had answers.

These comments were considered justified, and steps were taken to increase the number and vary the type of test items in later comprehensive and posttests. (See the principal instructor's comments below on changes made to the course in subsequent terms.)

The third area of comment was student behavior and response to the revised MFDO course. The principal instructor made this analysis of the difference between his experience in the recently completed second term, and the first term.

> I found this time, for some reason, the students didn't get into it as much as they did the previous semester. By getting into it I mean they didn't accept as much responsibility. I especially noticed this among some of the foreign students, without slandering anyone unfairly. But those that come from more regimented educational systems than our Canadian system tended to take advantage as much as possible. They never did seem to understand that when they were given a pretest or a posttest it was for them to find out how they were doing. It was always to prove to me how well they were doing, and I ended up being their guardian much more than I wanted to be.

Rscher: Do you have any feeling why the involvement was less this time?

PI: Not a very succinct one. There was a different tone to the class this time. I remember you commenting last time that if you went down to the class (and it was true) if you went down before class there would be students, or the whole class would be in there working already. They weren't like that this time, for some reason. This time there were a few

> students who set the tone for the class and some of them were the ones who used the exams to impress other people, as opposed to proving they had learned it. They maybe shifted the tone. And to some extent maybe I'm at fault because I didn't, the second time through, hit on the particulars as much as I should, or as I did the first time I went through it.

Rscher: The basic points?

PI: The basic points, yeah. I think some of these needed it more than the first did, and I gave them less of it. It sorted of floated away from me and was a problem before I saw it. That's something I will correct this time.

The second instructor agreed with the principal instructor's conclusion:

> I think one of the problems there is the students need a fair amount of guidance. They're used to someone saying, You have to get this done and you have to get it done by this time. I think they're kind of dependent on that and to get all this relative freedom that they have in this class as compared with previous classes, they don't know what to do with that. They have trouble taking responsibility. When I was going through the assessments a couple of the students said they seemed to work better when someone was setting some deadlines for them.

The principal instructor eventually produced a "contract" for students in Term 4, detailing their responsibilities and giving them a schedule of test dates designed to permit them to complete the course in time for the Final Exam (Appendix T). In addition to the above reasons related to guidance, the following expresses his feelings about the need to provide students with some transition from the MFDO environment to the less flexible learning conditions of other courses:

> I sometimes wonder how fair we are to the students in the end. We take them and put them in this for an hour a day for ten weeks, and, assuming they make it, put them back in. Maybe there should be some consideration given to the transition.

The biggest worry of both instructors was student problem solving ability, and retention of the computation skills they were studying daily. The second instructor identified a phenomenon, called "functional fixedness" by Eisner (1974:28), "inert knowledge" by Whitehead (in Eisner, 1974), and its opposite a state of "automaticity" by Gagné (1982:14)*. Functional fixedness means, simply, that knowledge is not available for use except when called up by very specific cues.

> SI: I usually give out review sheets that summarize everything we've done on two or three pages, because they're going to be expected to recall that on the Final Exam. And I did, as a matter of fact, about half way through the term, give them a test that covered a wide variety of questions. Well, it seemed like they didn't know what to do with it. Until you give them a few pointers, of course, and then they seemed to be okay.

This last point led to a discussion of student use of classroom time, and the instructors' impulses to teach more directly. The second instructor described his feelings:

> For some reason I didn't feel I was on top of things as much as I like to be.

---

*Gagné (1982:14) defines "automaticity" in this sense: ". . . some procedures of reading and arithmetic ought to be not simply mastered but brought to a state of automaticity."

Rscher: When you reflect on it, in how many cases was that true, and were the students suffering from it or not?

SI: Well, I was probably suffering more from it, I guess. I didn't get any complaints from the students. They learned pretty fast they couldn't come up and say, What do I do next? Without their Profile sheets I'd say, I don't know. I don't know where you are. They'd have to go back and get it and, of course, then I'd be able to tell them.

Because he was astute enough to recognize that his feelings were not particularly shared by the students, the second instructor adjusted to a different role. The principal instructor summarized the essence of his adjustments and the nature of his new role:

> There are really two questions: how much do you feel in control, and how much assistance do you have to give students to make them feel in control. Now if all the students did feel in control, and did know where they were, and didn't feel lost or anything, it's my problem, then, really. Because they're feeling okay, and my efforts should be put somewhere else, rather than in trying to keep my finger on everyone. That's a waste of time if they don't need it or want it, even. That would be my feeling, that it's better if I don't get too much in control, if I can stop myself from doing that, simply because it tends to make the students feel like I'm in control and they're not. It's a question of responsibility.

The Instructors' End-of-Project Assessment. At the conclusion of the study, both instructors participated in a final review of various aspects of the pilot. Tables 23, 24, and 25 (pages 281, 282, and 283) summarize their replies. In the following, comments of instructors are discussed on items which were rated "Fair" or lower (Table 23), or which

Table 23: Participating Instructors' Views on Materials and Methods Used in the Pilot Projects

Item	Principal Instructor, MFDO	Second Instructor, MFDO	Basic Education English	High School Reading 10	High School English 13
1. Needs statement	Ex	NS[1]	VG	VG	Ex
2. Pretest	VG	G	F[2]	G	Ex
3. Objectives	VG	F	Ex	Ex	Ex
4. Instructional modules	G	F	P[3]	NS[2]	VG
5. Exercises	G	G	NA	NA	VG
6. Posttests	VG	P	NA	NA	VG
7. Comprehensive tests	VG	F	NA	NA	Ex
8. PLATO components	VG	G	NA	NA	NA
9. Student records, profiles	VG	G	NA	NA	Ex
10. Student orientation	F	VG	NA	NA	Ex
11. Classroom activities	G	VG	NA	NA	VG
12. Other materials, methods	G	NS	NA	NA	NS

[1] The instructor felt this was done in April to June, 1982, and did not need to be repeated.

[2] Not developed as part of the pilot project.

[3] Modules the instructor had developed on her own were under revision.

Rating scale: Ex = excellent; VG = very good; G = good; F = fair; P = poor; NS = not sure, no comment; NA = not applicable

Table 24: Participating Instructors' Analysis of the Total Curriculum Renewal Task

Question	Principal Instructor, MFDO	Second Instructor, MFDO	Basic Education English	High School Reading 10	High School English 13
1. Are the results of this project useful to students in the course for which they were developed?	YD	Y	YD	Y	YD
2. Would a similar project be useful in any other courses?	Y	Y	YD	YD	YD
3. Would other instructors be interested in participating in a similar project?	Y	Y	Y	Y	YD
4. Do you have time (without released time) to develop this project further?	Y	Y	Y	Y	NS
5. Do you have the interest to develop this project further?	Y	Y	YD	YD	Y
6. Is this project compatible with the goals of the department?	Y	Y	YD	YD	YD
7. Is the subject of this project a recognized priority of the department?	Y	N	N	Y	Y
8. Is the subject of this project already being addressed?	Y	Y	NS	Y	Y
9. Has this project sufficiently addressed the need?	N	Y	ND	N	N

Rating code: YD = yes definitely; Y = yes; N = no; ND = no definitely;
NS = not sure, no comment

Table 25: Participants' Analysis of Communications in Developing the Pilot Projects

Question	Principal Instructor, MPDO	Second Instructor, MPDO	Basic Education English	High School Reading 10	High School English 13
1. Was the need or problem the project addressed clear to you?	Y	Y	N	Y	Y
2. Did you meet often enough?	Y	Y	N	Y	Y
3. Were your meetings long enough?	Y	Y	Y	Y	YD
4. Were your meetings efficient?	Y	Y	N	Y	YD
5. Were the purpose and outcomes of the meetings clear to you?	Y	Y	YD	Y	YD
6. Were your ideas about the project well-received?	YD	Y	YD	Y	Y
7. Were your questions or reservations addressed?	YD	Y	YD	Y	YD
8. Did you have a large enough role in the project?	Y	Y	N	Y	YD
9. Did your role in the project satisfy you?	YD	Y	N	Y	Y
10. Was the project worth the time you spent on it?	YD	Y	Y	Y	YD

Rating code: YD = yes definitely; Y = yes; N = no; ND = no definitely produced negative replies (Tables 24 and 25).*

Regarding "Materials and Methods" (Table 21), the principal instructor had not been satisfied with his orientation of students to the course. Specifically he wished to make students' responsibilities clearer to hhem. (This analysis was performed in April, at the beginning of the term in which he provided students with the contract contained in Appendix T. Subsequent information from the principal instructor during Term 4 indicated he found this contract effective in addressing the problem described here.)

The second instructor felt the objectives written for fractions and decimals were useful to the instructor, but only marginally useful to students. He felt the objectives should be reduced in number to four or five. He was also not satisfied with the instructional modules, which he felt needed better explanatory material and problem solving exercises.

The second instructor's criticisms of the posttest and comprehensive tests, already described in his own words, above, centered on his fear that students might gain a false sense of their abilities from passing these tests. He felt that gearing tests to specific objectives was too different from testing practices in the rest of the ABE program, and that successes on those tests would not be maintained on other, less focused testing.

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*The instructor of the Basic Education 4 - 5 course did not participate because no actual curriculum revision had been done (see below).

Regarding the "Total Task" (Table 24), or overall curriculum renewal need within the program where the project occurred, the principal instructor commented only that "the need for greater flexibility and more adult curriculum extends far beyond this course." The second instructor, on the other hand, commented on this item that "the project has shown that wholesale changes are not needed, and small adjustments will serve most students' needs." The second instructor also felt the subject of the project was not a priority of the ABE math department because the project's goals implied major changes, while departmental priorities focused on small-scale adjustments to the existing curriculum.

The "Communications Analysis" (Table 25) asked for comments on the interaction which occurred between the instructors and the researcher. The second instructor answered positively to all questions, only noting, to the question of whether his role had been satisfying, that it had not been in his first ten-week term but had been in the second. He attributed the difference to greater familiarity with the project, and to some clarifications which resulted from the mid-point evaluation interview.

The principal instructor was even more positive. He added a page of comment to his replies, some of which were as follows (numbering refers to questions on the Communications Analysis (Table 25):

6. My ideas were very well received. I was actively encouraged to attempt new approaches and the researcher was invaluable in his efforts to assist me in clarifying what were not always clear thoughts.

8. I tended not to view my role as "my role in the project," but rather as my role in the development of a particular method of course presentation for the institution. While aware that I had some role to play as a participant in the project, my motivation for participating went far beyond the project itself. I might say that I was pleased to be involved in the project. This is true because it (the project) was, in my view, a good thing for the institution and also because the project served well my own interests and prejudices.

9. The role I played in the project was more than significant enough to satisfy me. Had it not been for the necessity to continue the project, I may have given in to despair about the validity of my own motivations and discontinued my involvement. This would, in retrospect, have been very unfortunate as just now are the real fruits of the project being born. I am now deeply convinced that the initiatives of the project must find a way into the mainstream at AVC.

10. I have gained numerous insights into the educative process that I might otherwise not have gained. The discussions coming out of the project have made me much more aware of the intricacies and uncertainties inherent in the "provision" of courses for people.

Summary of Findings from the MFDO Pilot Project

The two MFDO instructors showed quite different outlooks on a number of issues in the mid-point interview and the end-of-project assessment. Two chief differences emerged, one related to the purpose of the course and the other to the results. Concerning the purpose of a remedial, "second chance" course such as MFDO, the principal instructor felt that many learning options should exist in order to provide as much as possible for each student's unique learning needs. The second instructor, on the other hand, arguing that such learning accommodations would not be available later, felt MFDO conditions should replicate conditions thought to exist elsewhere, and should identify ("select" and "classify," in Bloom's terms) students with academic potential by their performance in the standard course.

These different outlooks are further reflected in interpretations of the MFDO project's results. The second instructor, looking at the MFD Final Exam results, noted that two-thirds had still failed to pass after a second ten weeks of preparation. The principal instructor, looking at the same data, rejoiced that one-third (sixteen students!) who had been thought incapable of further math progress had mastered the MFD Final Exam, and with average scores as good as those obtained by first time passers of the Exam from regular MFD classes. To the charge that these MFDO alumni would now face "traditional/conventional" learning conditions in their next courses the principal instructor replied that he would expect the institution's commitment to alternative delivery of instruction would result in changes to these other courses, in response to learners' needs. (He might have found further encouragement in Bloom's (1974:686) finding that students who experienced mastery learning conditions seemed to "learn how to learn," so that "under mastery learning students become more effective in their learning of the subject and need less and less help and time to reach the criterion of mastery.")

At the end-of-project assessment few of these views had been modified. The second instructor indicated he felt his views had been borne out, in that most students had not passed the Final Exam. He did acknowledge, however, that he was more positive about some features of the course then, and he considered what had been developed as a "supplement" he might in future use with regular MFD students. The principal instructor, on the other hand, felt even more strongly that the revised MFDO course is more appropriate for adult students. He expressed his satisfaction with the work accomplished so far, and with the personal insights he had gained.

The Small-Scale Pilot Projects

Background

In addition to the full-scale MFDO course revision project, three* other much smaller curriculum revision projects were conducted in response to expressions of interest by instructors in other ABE and High School courses.

English 13. In December, 1982, after completion of a needs statement (Appendix J), implementation of a small-scale pilot project in this High School English course commenced.

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*Discussions were also held with the Basic Education English 4 - 5 instructor, and a needs statement was produced (Appendix L) but no curriculum development or revision occurred.

The needs statement had indicated an instructional problem which seemed both addressable in terms of time for development, and in its "rote" character. It was also a problem which could be used to demonstrate the application of mastery learning conditions with non-mathematical content.

In February, 1983, plans were made for a trial implementation of the "Word Choice" module. The implementation occurred in March, involving one class of fifteen English 13 students.

Basic Education English 4 - 5. The needs statement for this course (Appendix K) identified the need for a rationale for this course, and some systematization of its instructional materials. After discussions between the instructor and the researcher based on classroom observations by the researcher in January, 1983, it was agreed that the course already observed many mastery learning principles, and that it was successful in meeting the learning needs of its students, but that it would have a greater influence on thinking within the ABE English department if its assumptions were more clearly articulated. No further specific action was immediately planned, except that the researcher agreed to assist the instructor with this task in the future.

Basic Education English 5 - 6. The instructors of this course, neither of whom had taught the course before, expressed extreme frustration with the process of learning the course in the absence of a goal statement or syllabus, and without detailed knowledge of the instructional materials. In familiarizing themselves with the course they identified the need for an annotated bibliography of materials, and for some guidance as to the course's instructional goals and objectives (Appendix L). As a result, the first unit of the course, "Main Ideas," was the focus of efforts by the researcher in which he developed objectives related to present materials. The instructors reviewed these, and one of them was asked to evaluate the usefulness of the product and the process (Tables 23 to 25).

Reading 10. This High School course serves as a transitional course for students moving from the ABE program to High School but who lack some reading skills necessary for success in High School subjects. The needs statement developed by the researcher with the instructor indicated concern for accurate placement of students in the course, based on a successful diagnosis of certain specific reading comprehension problems (Appendix M). The researcher agreed to assist the instructor in developing objectives for a module on "Context," and to design a pretest. The pretest was eventually used, in March, 1983, with a class of new Reading 10 students.

Instructor End-of-Project Assessments. Tables 23 to 25 (pp. 241 to 243) show the views of the three instructors for whose courses materials were actually produced for small-scale demonstrations. As in the previous section, only low-rated or negatively-rated items will be commented upon here.

In her analysis of "Methods and Materials," the Basic Education English 6 - 7 instructor noted the need for more comprehensive pretests to improve student placement. She was also critical of present instructional materials she had inherited with the course. (The next steps in the pilot project would have been to address these items, she felt, as a format for useful and well-developed objectives had been demonstrated in the pilot project.) The other instructors expressed high levels of satisfaction with materials and methods.*

Regarding the "Total Task," all three instructors felt more remained to be done (question 9), despite good beginnings. The Basic Education English instructor felt that doing more would involve her in a rather lonely process, however, as the topic did not seem to her to be a departmental priority.

The English 13 instructor was not able to predict whether or not she would have time to work further on the project as her assignments changed frequently. She did express interest in further involvement, however.

On the "Communications Analysis" the Basic Education English instructor felt the problem addressed in the project was initially vague, but that it subsequently became clearer (question 1). (She concluded that part of the problem of lack of clarity was due to vague departmental goals for the course, a problem she felt would need to be addressed by the Basic Education English department.) She had also been eager to do more in the project (questions 2, 8, and 9), but found the researcher occasionally too busy to accommodate her. She also felt meetings would have been more efficient if goals had been clearer (question 4).

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*The English 13 instructor's positive ratings throughout may have been due to the positive response of her students to the Word Choice unit (Appendix U).

Summary

The pilot projects ranged in scope from a single unit to an entire ABE math course, and in term from one week to the entire 1982 - 83 academic year. The focus was the same in all cases, however: the systematic identification of an instructional problem and the construction, implementation, and formative evaluation of a means to address it.

Various findings of the staff questionnaire and interviews were applied to the pilot projects: 1) that most staff support the use of individualization and alternative instructional methodologies, but most have little direct experience with either; 2) that the use of computers is considered potentially helpful by the majority, provided the student is not given too much control and too little direction, and that the instructor's role is not demeaned; 3) that many staff feel curriculum planning and evaluation is usually poorly done, but they are only marginally prepared to accept the need for a staff member with special training to help with these chores; 4) that instructors express consistent interest in deep involvement with curriculum development, including learning how to do it better.

Summary of Findings Related to Research Question #3: Effects of the Pilot Projects on the Views of Participants

The findings of the MFDO course redesign, the largest of the pilot projects, and the smaller scale pilots, are:

1) Instructors' initial views were, for the most part, confirmed by their participation in the pilot projects. For example, the Principal Instructor in the MFDO pilot project increased his conviction that students require instructional alternatives, and that these should feature mastery learning conditions. The Second Instructor also had his view confirmed that students' learning problems had not been addressed by mastery-based learning by the fact that two-thirds still failed the MFD final exam after completing MFDO.

2) All participating instructors agreed that the consultative, site-specific curriculum development process had been satisfying and productive. Suggestions for improvement dealt with the lack of time to concentrate on and complete the whole development task, and the importance in future of involving others in the development process.

3) Regarding the specific components of the pilot projects instructors were most impressed with the Needs Statements (two "excellent" and two "very good" evaluations), the Objectives (three "excellent," one "very good," and one "fair"), and the PLATO components, and the Student Records and Profiles (both with one "excellent," one "very good," and one "good" rating). It is interesting that what resonated with the pilot projects participants were planning, monitoring and management tools rather than instructional ones. Experience with these elements of the curriculum design process struck the instructors as more useful perhaps because these are elements which are lacking and most needed in the present curriculum, as the questionnaires showed.

4) Students reported high levels of satisfaction with redesigned course components. Elements regarded most favorably by students were the opportunity to proceed at their own pace, the fact that missing a class did not put them behind, the availability of help when needed, and the opportunity to completely master a concept before being tested on it.

Chapter 8

CONCLUSIONS AND RECOMMENDATIONS

Conclusions Related to the Research Questions

Introduction

The problem investigated in this study is the dearth of information about the views of Adult Basic Education (ABE) instructors and administrators, related to the curriculum and instruction needs of basic education level adult students. Three research questions were posed to focus the investigation:

1) What are the views of instructors and administrators in an operating, well-established adult basic education program, regarding curriculum needs, priorities, and achievements?

2) How do the views of staff compare with the advice of some adult education experts regarding good curriculum and instruction practice in adult education generally, and adult basic education in particular?

3) What are the views of instructors and administrators who participate in curriculum development projects during the course of the study, regarding the value of the curriculum products to students, and the value of the development process to themselves?

In this final chapter the conclusions and recommendations related to each of these questions are presented.

Research Question #1: Curriculum Needs, Priorities and Achievements

Conclusions*

The following conclusions were reached from the questionnaire and interview findings presented in chapter 5.

1) There is general agreement that curriculum in the institution should be "functional", that is, applicable to further training, upgrading, employment, or more effective adult participation in society.

2) There is concern that, presently, students do not always develop adequate mastery of basic skills. This is apparent in low levels of retention and in inability to apply skills in real-life, or problem-solving, situations.

3) Administrators and instructors agree that first-line administrators (Senior Instructors and Program Heads) are unable to provide adequate leadership and supervision of curriculum development activities because of the pressure of other, often clerical, duties. The apparent reliance of management and instructors on this group for active leadership in curriculum development in the future makes this state of affairs a major impediment to renewal.

4) There is dissatisfaction with the lack of systematic planning and articulation of curriculum development

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*The conclusions are not presented in order of priority.

activities, and with the uncertainty of budget support for it. Different groups identified different sources for the problem: lack of 1) appropriate advance planning, 2) clear curriculum goals, 3) instructor expertise in designing and conducting instruction for adults, and 4) information on present program effectiveness were cited.

5) All parties expect to see the involvement of computers in some capacity in the instructional program. Opinions about the exact uses and the advance preparations required vary, however, with instructors and administrators very concerned that their role and the institution's expectations be clarified before any large-scale implementation.

6) The following terms suffer from a lack of clear, shared definition: individualized instruction, modularized curriculum, mastery learning, and alternative delivery of instruction. Some instructors feel all of these terms refer to options supplemental to the primary classroom mode of instruction. Widely varying opinions exist, however, among instructors and between instructors, administrators and managers. Given this confusion it appears use of these terms will not result in clear communication. Examples and definitions must be provided if these terms are to be used in discussion of curriculum with precision in the institution.

7) Instructors and administrators have a low opinion of students' capabilities to function independently in a

learning task. Instructors' and administrators' views, for the most part, do not reflect acknowledgement of the "adult" nature of the clientele, or an andragogic orientation to the teaching/learning situation. At the same time there is genuine appreciation of the learning constraints students experience. There does not seem to be recognition that some of the institution's demands might contribute to students' problems in becoming or remaining students, however.

Recommendations

Strong support exists for the principle of a functional, flexible curriculum capable of serving various learning needs and preferences. Because increasing functionality and flexibility both involve reconsideration of all aspects of the curriculum the first recommendation is:

Recommendation 1: Future curriculum development should stress functional skills and knowledge (i.e. those useful in meeting the everyday needs of students) and flexibility (i.e. access compatible with students' individual needs and preferences).

A second recommendation arises from the frequent observation of staff that incomplete learning of core skills seriously affects students' subsequent efforts.

Recommendation 2: The essentials of the mastery learning model should be adopted in order to accommodate students' individual learning needs and to provide for better mastery of skills essential for identified student goals.

The interviews showed several points on which instructional staff and management differ regarding the future direction of curriculum. Those in the best position to analyze these differences and mediate between the differing parties are those upon whom primary responsibility for maintenance of program quality rests: the program administrators (the four Senior Instructors and two Program Heads).

Recommendation 3: The role of program administrators in assuring the quality of the curriculum should be studied and appropriate adjustments made to permit them to fulfill this role.

Related to recommendation 3 is the concern about planning and evaluation of curriculum change. Again, though all parties (instructional, administrative and managerial) are involved primary responsibility for the planning, co-ordination and evaluation of curriculum change projects rests with program administrators.

Recommendation 4: Development of new curriculum or the revision of the existing program should be systematically planned, coordinated and evaluated with the full participation of program administrators, equipped with the required resources.

No single curriculum issue polarized opinion as much as the introduction, or planned introduction, of computer-based learning (CBL). Because of the anxiety produced by several uncertainties related to CBL the following recommendation is made.

Recommendation 5: Immediate steps should be taken to clarify the institution's policies regarding CBL, including issues of inservice training for instructors, the instructor's role in CBL, and the consultation procedure to be used in making decisions related to the introduction of technology in the program.

The next recommendation arises from a concern for clarity in communications about curriculum.

Recommendation 6: The following terms (and others as they are identified) should be carefully defined when used in reference to curriculum: individualized instruction, mastery learning, learning modules, and alternative delivery of instruction.

Some instructors and managers questioned how truly "adult" (in andragogic terms) the institution's programs are. They felt a statement of the institution's philosophy of adult education would help guide development of appropriate instruction.

Recommendation 7: The institution's philosophy of adult education should be stated and discussed, and its implications for curriculum and instruction explored.

Research Question #2: Staff and Expert Opinion on Adult Education

Conclusions

Based on the initial and final staff questionnaires and interviews and the Questionnaire Analysis Panel, reported in chapter 6, the following conclusions were reached.

1. Andragogy. Some instructors regard ABE students (especially those at the lower academic levels) as incapable of self-direction or of exercising important choices about their learning. There is agreement that some exceptional students (including those with marked learning problems) might benefit from individualized learning opportunities such as those planned for delivery through the Learning Resource Centre, but for the majority of students staff saw little capability or desire for learning conditions based on andragogic principles.

2. Generally, learning materials are chosen in the ABE program for their adult content and style. In the High School materials from the public school curriculum are

routinely used.

3. Mastery Learning. The principles of mastery learning, including provision of clear objectives, flexible amounts of time for learning, and frequent opportunities for feedback and correctives, are regarded with skepticism by many instructors. Reasons include the difficulty of providing quality materials, the problems of monitoring students working at different paces and different places in the curriculum, and the suspected inability of students to manage the independence this learning model implies. There are also concerns that an individualized learning model might prevent student-student and student-instructor interaction, regarded as a central component of the learning program in the institution.

4. Staff agreed with expert opinion on the need for and usefulness of individualized instruction for some students. A minority of students whose special or unusual needs can not be met in the regular classroom are considered appropriate candidates for alternative learning modes.

5. Developmental Studies. Instructors generally did not accept the position of developmental studies experts that students require mastery learning conditions and an andragogic learning environment to develop greater independence, self-directedness, and feelings of control over their lives. Instructors tend instead to favor a learning environment which provides a great deal of structure for most students, and

which limits choices, but which can be made more flexible for some (i.e. those with unique or unusual learning requirements) through facilities such as the Learning Resource Centre.

Recommendations

Many instructors in the ABE program express little faith in students' capacities or needs to be self-directed. Consequently, few decisions about the content or conditions of their learning are entrusted to the students themselves.

Recommendation 8: Andragogy's basic principle of adult learning -- that adults have a greater need and capacity for self-direction than non-adults -- should be incorporated in the institution's philosophy of adult education, and its implications for curriculum and instruction carefully explored and, where possible, demonstrated.

While some features of the mastery learning model were acknowledged as possible learning alternatives by some staff, the majority were uncertain or outright negative about the model's usefulness. Yet the mastery model of learning is specifically recommended by developmental studies experts for high-risk, remedial students such as those often found in the ABE program.

Recommendation 9: Further curriculum development projects should be conducted employing mastery learning principles with students requiring or preferring different learning conditions, in order to determine which mastery principles have value for the institution's students and how these benefits may be made more widely available.

Research Question #3: Effects of Participation in the Pilot Projects on Instructors' Views

Conclusions

The following conclusions were reached on the basis of the results of the pilot projects, as described in chapter 7.

1. Instructors' initial views were, for the most part, confirmed by their participation in the pilot projects. For example, the Principal Instructor in the MFDO pilot project increased his conviction that students require instructional alternatives, and that these should feature mastery learning conditions. The Second Instructor also had his view confirmed that students' learning problems had not been addressed by mastery learning, in that two-thirds of the students failed the MFD final exam after completing MFDO.

2. All participating instructors agreed that the consultative, site-specific curriculum development process had been satisfying and productive. Suggestions for improvement dealt with the lack of time to concentrate on and complete the whole development task, and the importance in

future of involving others in the development process.

3. Regarding the specific components of the pilot projects instructors were most impressed with the needs statements, the listing of the objectives, and the PLATO components, including the student records and profiles.

4. Students reported high levels of satisfaction with redesigned course components. Elements regarded most favorably by students were the opportunity to proceed at their own pace, the fact that missing a class did not put them behind, the availability of help when needed, and the opportunity to completely master a concept before being tested on it.

Recommendations

In chapter 2 Rogers' (1962) finding that trials of innovations can accelerate the adoption/rejection process was discussed. The pilot projects seem to have had this effect on participants, as different instructors came to different conclusions about various innovations on the basis of their experience in the pilots (colored, of course, by their philosophical convictions about adult education). However, even when the decision was to reject the innovation (as in the case of the Second Instructor in the MFDO project) the rejection was by no means final. As noted in the final interview, the Second Instructor regarded some elements of the experiment as successful, and held open the possibility of his further involvement in this or similar pilot projects in the future. These facts support the following recommendation:

Recommendation 10: Short-term, focused pilot projects should be conducted regularly in order to permit instructional staff to gain direct experience with innovative learning conditions and practices.

The site-specific, balanced-coordinated curriculum strategy, with its emphasis on the practical, purposive, realistic and judicious, was evaluated very positively by participants.

Recommendation 11: The site-specific, balanced-coordinated curriculum development strategy, emphasizing practicality, purposiveness, realism and judiciousness, should be adopted for the design and conduct of future curriculum pilot projects in the institution.

The specific elements of the curriculum pilot projects that impressed instructors were the needs statements, objectives, and PLATO-based computer-managed learning components such as the student records and profiles. These are the elements of the various projects which resulted from or were intended to promote careful planning and evaluation (or, in the case of the student records, self-evaluation), and to minimize the clerical and support requirements of the innovation by the use of appropriate technology.

Recommendation 12: Planning and evaluation should be visible in curriculum pilot projects in the form of clear project goals and procedures, and appropriate use of technology to provide greater flexibility, access, and learning management.

Finally, students responded favorably to their experiences in the pilot projects, citing as advantageous several outcomes related to greater flexibility which the adult education literature predicted would be regarded as beneficial.

Recommendation 13: Student response to curriculum innovations should be carefully assessed and this input included in all evaluations of curriculum projects.

Suggestions for Further Research

The question of students' capacities for self-direction and the conditions which foster growth in self-directedness deserve greater attention. Such a study might involve students at all academic levels and in all subject areas. One previous study already completed in the High School math department yielded interesting results regarding the question of student adaptation to self-study opportunities (Mallett, 1977).

A second area in which further research would be useful is curriculum planning mechanisms in the institution. A study of mechanisms such as the institutional development plan, budget planning, and planning within programs and departments would be useful in determining the efficiency of the system.

A third related suggestion is that some previous institutional climate studies involving students and staff be replicated. Two of these which formerly produced interesting findings were studies by Bosetti (1975), using the Institutional Functioning Index with staff, and Fahy (1978b), using the Educational Goal Preference Inventory with students and staff. A longitudinal perspective might show where curriculum change is needed in order to adjust to changes in student or staff characteristics.

A fourth area for further study is in regard to the curriculum development process itself. In this study the researcher guided and motivated the curriculum development process as both developer and change agent. The functions he performed are not usually available in the institution. The degree to which curriculum change requires such leadership and the optimum form of that leadership are important and timely questions.

Finally, this study was conducted in the Academic Upgrading program, with special emphasis on the Adult Basic Education program. The conclusions apply specifically to that environment. A similar study in another adult education environment would yield interesting comparative information regarding thinking and behavior, and curriculum needs. In the same vein, the major questions of this study might be asked again in three to five years, to determine the direction thinking and activity in curriculum have taken.

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APPENDICES

APPENDIX A

Initial Staff Questionnaire

STAFF QUESTIONNAIRE

This questionnaire contains statements about the following topics:

- -- individualized instruction
- -- alternative delivery modes and teaching methods
- -- innovation and change
- -- computers
- -- students' learning attitudes and preferences
- -- curriculum development

The statements are often general, and some may not apply directly to you. However, PLEASE TRY TO RESPOND TO EACH STATEMENT, giving your first impression of the accuracy of the statement in your department. Don't study the statements too much -- they are meant to be straightforward expressions of opinion which teachers at AVC might hold, and your immediate reactions to these opinions are wanted.

It is not necessary to put your name on the questionnaire. Results will be tabulated for various departments, but no individual responses will be reported. Your individual responses will not be known by anyone.

I would appreciate receiving the questionnaire by Friday, October 1. If you wish to talk to me about any item, or about the questionnaire in general, I would be more than happy to meet with you.

Thank you for your cooperation. The results of this survey will be available to you, as soon as the analysis is finished.

Pat Fahy
Basic Education -- 330C
7 - 5520

Directions: Please provide a response to each of the following statements by circling:

SA - STRONGLY AGREE

A - AGREE

N NEUTRAL; NO OPINION; DOES NOT APPLY

D - DISAGREE

SD - STRONGLY DISAGREE

* * * * *

1. Individualized Instruction

SA A N D SD 1. Individualized instruction should be an option for all students in the program.

SA A N D SD 2. Most students in the program would benefit from a program which included some individualized instruction.

SA A N D SD 3. Most students in the program would probably choose some individualized instruction, if given the choice.

SA A N D SD 4. Individualized instruction often results in isolation for students.

SA A N D SD 5. Regular group contact for students is not a usual feature of individualized instruction.

SA A N D SD 6. Individualized instruction can produce an overload of marking and clerical tasks for the instructor.

SA A N D SD 7. Individualized instruction has been adequately tested in the department in the past.

2. Alternative Delivery Modes and Teaching Methods

SA A N D SD 8. No single mode of instruction is likely to suit all students.

SA A N D SD 9. Developing alternative instruction and teaching methods in this program would probably require outside expertise.

SA A N D SD 10. The present courses in this program are suitable for use by parttime students (i.e., students who attend on an irregular schedule).

SA A N D SD 11. Parttime students should be actively encouraged to enrol in the regular daytime program.

SA A N D SD 12. Methods suited to the unique needs of students in this program should be used, even if these methods are not available to the students later.

SA A N D SD 13. At present, this program reaches the students it is intended to serve.

SA A N D SD 14. Most students would probably benefit from alternative modes of delivery of instruction.

SA A N D SD 15. Generally, the teaching methods in this program are suited to the learning needs of adults.

SA A N D SD 16. Most instructional staff could benefit from inservice programs in instructional methods for adults.

SA A N D SD 17 Most staff are adequately aware of the potential uses of technology for alternative delivery of instruction.

3. Innovation and Change

SA A N D SD 18. The courses in this program already employ an adequate variety of methods to suit most students' needs.

SA A N D SD 19. Curriculum innovation is common in this program

SA A N D SD 20. Most curriculum changes in this department have resulted in improvements.

SA A N D SD 21. Most staff in this program believe curriculum change is a normal occurrence.

SA A N D SD 22. The resources needed to make needed changes in this program are generally available.

SA A N D SD 23. Well-planned change in curriculum is possible under usual conditions in this program.

SA A N D SD 24. Planning for change is usually done effectively in this program.

SA A N D SD 25. Staff suggestions for change are given a fair hearing in this program.

SA A N D SD 26. Changes in the curriculum are adequately evaluated to determine their effectiveness.

SA A N D SD 27. When changes are being contemplated in this program, staff are adequately consulted.

SA A N D SD 28. When needed, inservice preparation is provided to help staff in this program prepare for change.

4. Computers

SA A N D SD 29. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction)

SA A N D SD 30. Computers are best used in this program to help manage some of the routine tasks such as record keeping, drill and practice, etc. (Computer-managed instruction)

SA A N D SD 31. Most staff in this program feel comfortable with the prospect of computers in the program.

SA A N D SD 32. Most staff in this program are "computer literate."

SA A N D SD 33. The policy of the Alberta Vocational Centre toward computer-based education is clear to most instructors.

SA A N D SD 34. The role of the instructor in computer-based education is well-understood by most instructors.

SA A N D SD 35. The eventual use of computers in this program is regarded as probably inevitable by most staff.

SA A N D SD 36. Most staff welcome the application of computers to instruction in this program.

SA A N D SD 37. Most staff in this program believe they will have a major voice in determining the use of computers in this program.

SA A N D SD 38 A goal of this program ought to be to make students "computer literate."

5. Students' Learning Attitudes and Preferences

SA A N D SD 39. It is reasonable to expect students to have an occupational goal when they enter this program.

SA A N D SD 40. By the time a student leaves this program, he/she should have chosen a realistic career goal.

SA A N D SD 41 Most students in this program can be given major responsibility for their own learning.

SA A N D SD 42. Students should be required to attend classes regularly, even if they show they are learning without attending.

SA A N D SD 43. Most students in this program can be expected to learn to manage their own study time efficiently.

SA A N D SD 44. Most students in this program can be expected to seek extra help on their own when they need it.

6. Curriculum Development

SA A N D SD 45. Supervision of curriculum development in this program should be the responsibility of someone specially trained in the area of curriculum design.

SA A N D SD 46. All instructional staff should be given a regular opportunity for curriculum development.

SA A N D SD 47. This program should have a standard approach to curriculum development which is followed in all curriculum development projects.

SA A N D SD 48. The instructional goals of this program are clear to most instructors.

SA A N D SD 49. The instructional goals of this program are clear to most students.

SA A N D SD 50. The content of the curriculum in this program articulates well with that of other programs at AVC.

SA A N D SD 51 Students leaving this program usually have a realistic understanding of their academic abilities.

SA A N D SD 52. When curriculum development activities are completed, staff are usually informed adequately about them.

SA A N D SD 53. The procedure for proposing curriculum development projects in this program is clear to staff.

SA A N D SD 54. Staff regard curriculum development as a part of their instructional duties.

SA A N D SD 55 Staff who work on curriculum development projects receive adequate recognition for their efforts.

APPENDIX B

Final Staff Questionnaire

FINAL

STAFF QUESTIONNAIRE

This questionnaire is based upon items from the initial Staff Questionnaire, distributed last September. This questionnaire is considerably shorter than the first: it consists of 20 items from the initial questionnaire which produced the strongest opinions.

As in the initial questionnaire, some of the items may not apply directly to you, but PLEASE TRY TO ANSWER EACH ITEM. Give your first impression about the statement as it applies in your department. Don't study the statements too much -- they are meant to be straightforward expressions of opinions which instructors at AVC might hold, and your immediate reactions to these opinions are wanted.

Your participation in this study **is** appreciated. The results of this and the previous questionnaire will be made available to you as soon as possible.

Thank you.

Pat Fahy
Basic Education
5520

Directions: Please respond to each of the following statements by circling:

SA - Strongly Agree
A - Agree
N - Neutral; No Opinion; Does Not Apply
D - Disagree
SD - Strongly Disagree

* * * * *

SA A N D SD 1. Most students in the program would benefit from a program which included some individualized instruction.

SA A N D SD 2. Individualized instruction has been adequately tested in the department in the past.

SA A N D SD 3. No single mode of instruction is likely to suit all students.

SA A N D SD 4. Developing alternative instruction and teaching methods in this program would probably require outside expertise.

SA A N D SD 5. The present courses in this program are suitable for use by parttime students (i.e., students who attend on an irregular schedule).

SA A N D SD 6. Parttime students should be actively encouraged to enrol in the regular daytime program.

SA A N D SD 7. Most students would probably benefit from alternative modes of delivery of instruction.

SA A N D SD 8. Most instructional staff could benefit from inservice programs in instructional methods for adults.

SA A N D SD 9. Most staff are adequately aware of the potential uses of technology for alternative delivery of instruction.

SA A N D SD 10. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction)

SA A N D SD 11. Computers are best used in this program to help manage some of the routine tasks such as record keeping, drill and practice, etc. (Computer-managed instruction)

SA A N D SD 12. Most staff in this program feel comfortable with the prospect of computers in the program.

SA A N D SD 13. Most staff in this program are "computer literate."

SA A N D SD 14. The policy of the Alberta Vocational Centre toward computer-based education is clear to most instructors.

SA A N D SD 15. The role of the instructor in computer-based education is well-understood by most instructors.

SA A N D SD 16. Most staff in this program believe they will have a major voice in determining the use of computers in this program.

SA A N D SD 17. By the time a student leaves this program he/she should have chosen a realistic career goal.

SA A N D SD 18. All instructional staff should be given a regular opportunity for curriculum development.

SA A N D SD 19. Most students in the program would probably choose some individualized instruction, if given the choice.

SA A N D SD 20. Most curriculum changes in this department have resulted in improvements.

APPENDIX C

Initial Staff Questionnaire Results

Questions for Discussion by the Questionnaire Analysis Panel

Staff Questionnaire Results[1]

	Basic Education (n=17)				High School (n=11)				RNA (n=9)				Total	
	Mean	S.D.	Median	Rank[2]	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
Individualized Instruction														
1. Individualized instruction should be an option for all students in the program.	2.12*	.86	2.0	7	3.09*	1.14	3.0	41	2.67	1.12	2.0	33	2.54	19
2. Most students in the program would benefit from a program which included some individualized instruction.	2.06*	.56	2.0	6	2.46*	1.13	3.0	13	1.33**	.50	1.0	1	2.00	4
3. Most students in the program would probably choose some individualized instruction if given the choice.	2.65**	.93	2.0	18	2.27	.79	2.0	6	1.79**	.97	2.0	6	2.33	10
4. Individualized instruction often results in isolation for students.	2.65	1.12	2.0	18	2.55	.93	3.0	18	3.33	1.12	4.0	47	2.79	29
5. Regular group contact for students is not a usual feature of individualized instruction.	2.77	1.03	2.0	26	2.91	1.14	3.0	26	3.44	1.01	3.0	49	2.97	36
6. Individualized instruction can produce an overload of clerical tasks for the instructor.	2.65	1.22	3.0	18	2.46	1.04	2.0	13	2.33	1.00	2.00	21	2.52	18
7. Individualized instruction has been adequately tested in the department in the past.	3.82	.88	4.0	50	3.64	.81	3.0	52	3.89	.78	4.0	53	3.78	52
Alternative Delivery Modes and Teaching Methods														
8. No single mode of instruction is likely to suit all students.	1.35**	.49	1.0	1	1.91**	.83	2.0	2	1.44	.53	1.0	2	1.54	1
9. Developing alternative instruction and teaching methods in this program would probably require outside expertise.	3.88**	1.05	4.0	51	3.55	1.04	4.0	51	2.78**	.97	2.0	36	3.51	50

*Significant beyond the 0.01 level.
**Significant beyond the 0.05 level.

---

[1] Scale: 1 = Strongly agree; 2 = Agree; 3 = Neutral, no opinion, does not apply; 4 = Disagree; 5 = Strongly disagree.

[2] Ranks from 1 to 55 indicate degree of agreement expressed on each item. Rank 1 indicates most agreement, rank 55 indicates least.

(Note: Asterisks indicate Programs differing from one another.)

Staff Questionnaire Results (Continued)

	Basic Education (n-17)				High School (n=11)				RNA (n=9)				Total	
	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
10. The present courses in this program are suitable for use by parttime students (i.e., students who attend on a irregular schedule).	3.59	1.06	4.0	46	3.27	.91	4.0	47	3.11	1.36	4.0	42	3.38	46.5
11. Parttime students should be actively encouraged to enroll in the regular daytime program.	3.59	1.06	4.0	46	2.91	1.04	3.0	26	3.78	.83	4.0	52	3.43	48
12. Methods suited to the unique needs of students in this program should be used, even if these methods are not available to students later.	2.18*	.64	2.0	8	3.09*	.94	3.0	41	2.44	.73	2.0	28	2.51	16.5
13. At present, this program reaches the students it is intended to serve.	2.94	.97	3.0	32	2.36	.67	2.0	11	2.56	.88	2.0	32	2.68	25
14. Most students would benefit from alternative modes of delivery of instruction.	1.82*	.39	2.0	2	3.00*,**	.89	3.0	32	2.00**	.87	2.0	12	2.21	5
15. Generally, the teaching methods in this program are suited to the learning needs of adults.	2.53	.72	2.0	12.5	2.27	.79	2.0	6	2.22	.83	2.0	16	2.38	12
16. Most instructional staff could benefit from inservice programs in instructional methods for adults.	1.94*	.66	2.0	3.5	2.91*,**	1.14	3.0	26	1.89**	.93	2.0	7	2.22	6
17. Most staff are adequately aware of potential uses of technology for alternative delivery of instruction.	4.12*,*	.70	4.0	53	2.82*	1.25	3.0	23	3.11*	1.17	3.0	42	3.49	49
Innovation and Change														
18. The courses in this program already employ an adequate variety of methods to suit most students' needs.	3.24	.97	3.0	37.5	2.91	.70	3.0	26	2.78	.97	2.0	36	3.03	40
19. Curriculum innovation is common in this program.	2.77	1.09	2.0	26	2.73	1.10	2.0	21	2.33	1.12	2.0	21	2.65	23

Staff Questionnaire Results (Continued)

	Basic Education (n=17)				High School (n=11)				RNA (n=9)				Total	
	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
20. Most curriculum changes in this department have resulted in improvements.	2.59*	.80	2.0	15.5	2.27	.79	2.0	6	1.89*	.33	2.0	7	2.32	9
21. Most staff in this program believe curriculum change is a normal occurrence.	2.53	.87	2.0	12.5	2.18	.87	2.0	5	2.44	1.24	2.0	28	2.40	13
22. The resources needed to make needed changes in this program are generally available.	2.88	.93	3.0	31	3.00	1.18	3.0	32	2.22	.83	2.0	16	2.76	27.5
23. Well-planned change in curriculum is possible under usual conditions in this program.	3.41*	1.00	4.0	41.5	2.82	1.08	3.0	23	2.22*	1.09	2.0	16	2.95	33.5
24. Planning for change is usually done efficiently in this program.	3.29**	.92	3.0	39	3.09	1.04	3.0	41	2.33**	1.12	2.0	21	3.00	37.5
25. Staff suggestions for change are given a fair hearing in this program.	2.47	.72	2.0	11	2.36	1.12	2.0	11	2.11	.78	2.0	15	2.35	11
26. Changes in the curriculum are adequately evaluated to determine their effectiveness.	3.53*	.94	4.0	44	3.00**	1.00	3.0	32	2.11*,**	.78	2.0	15	3.03	40
27. When changes are being contemplated in this program, staff are adequately consulted.	2.77	1.20	2.0	26	2.27	1.01	2.0	6	2.33	1,32	2.0	21	2.51	16.5
28. When needed, inservice preparation is provided to help staff prepare for change.	3.18	.73	3.0	35	3.00	.78	3.0	32	2.44	1.24	2.0	28	2.95	34
Computers														
29. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction.)	2.29	.69	2.0	9	2.46	.82	2.0	13	1.89	.93	2.0	7	2.24	7.5
30. Computers are best used in this program to help manage some of the routine tasks such as recordkeeping, drill and practice, etc. (Computer-managed instruction.)	2.35**	.61	2.0	10	2.27	.91	2.0	6	2.00**	.71	2.0	12	2.24	7.5

Staff Questionnaire Results (Continued)

	Basic Education (n=17)				High School (n=11)				RNA (n=9)				Total	
	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
31. Most staff in this program feel comfortable with the prospect of computers in the program.	3.65**	.61	4.0	48	3.00**	1.00	3.0	32	3.33	1.00	3.0	47	3.38	46.5
32. Most staff in this program are "computer literate."	4.18	.64	4.0	54	3.91	1.22	4.0	53	4.00	.87	4.0	55	4.06	54
33. The policy of AVC toward computer-based education is clear to most instructors.	4.35*	.61	4.0	55	4.00	1.00	4.0	54	3.67*	.50	4.0	51	4.08	55
34. The role of the instructor in computer-based education is well-understood by most instructors.	4.06	.66	4.0	52	4.00	1.27	4.0	54	3.89	.78	4.0	53	4.00	53
35. The eventual use of computers in this program is regarded as probably inevitable by most staff.	2.71	.92	2.0	21.5	2.91	1.37	3.0	26	2.22	.44	2.0	16	2.65	23.5
36. Most staff welcome the application of computers to instruction in this program.	3.24	.97	3.0	37.5	3.46	.69	3.0	50	2.89	.93	3.0	39	3.22	45
37. Most staff in this program believe they will have a major voice in determining the use of computers in this program.	3.77	.56	4.0	49	3.18	1.17	3.0	45	3.56	.88	4.0	50	3.54	51
38. A goal of this program ought to be to make students "computer literate."	2.77	.97	2.0	26	2.91	1.38	2.0	26	3.22	.97	3.0	45	2.92	32
Students' Learning Attitudes and Preferences														
39. It is reasonable to expect students to have an occupational goal when they enter this program.	3.47*'*	1.18	4.0	43	2.00*	.89	2.0	3	1.78*	.44	2.0	3	2.62	21.5
40. By the time a student leaves this program she/he should have chosen a realistic career goal.	1.94	.56	2.0	3.5	2.00	.89	2.0	3	1.78	.44	2.0	3	1.92	3
41. Most students in this program can be given major responsibility for their learning.	3.18	1.24	3.0	35	3.00	1.00	3.0	32	3.22	1.20	4.0	45	3.14	44

Table : Staff Questionnaire Results (Continued)

	Basic Education (n=17)				High School (n=11)				RNA (n=9†)				Total	
	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
42. Students should be required to attend classes regularly, even if they show they are learning without attending.	2.56	.89	2.0	14	2.55	1.21	2.0	18	3.11	1.17	3.0	42	2.69	26
43. Most students in this program can be expected to learn to manage their own study time efficiently.	3.18	1.02	3.0	35	3.27	1.10	4.0	47	2.67	1.00	2.0	33	3.08	42
44. Most students in this program can be expected to seek extra help on their own when they need it.	3.41	1.06	4.0	41.5	2.73	1.10	2.0	21	2.67	1.00	2.0	33	3.03	40
Curriculum Development														
45. Supervision of curriculum development in this program should be the responsibility of someone specially trained in the area of curriculum design.	3.06	1.25	4.0	33	2.82	1.25	2.0	23	2.44	.88	2.0	28	2.84	31
46. All instructional staff should be given a regular opportunity for curriculum development.	2.00	.87	2.0	5	1.73	.79	2.0	1	1.89	.33	2.0	7	1.89	2
47. This program should have a standard approach to curriculum development which is followed in all curriculum development projects.	2.77	1.09	2.0	28	3.18	.87	3.0	45	3.00	.87	3.0	40	2.95	33.5
48. The instructional goals of this program are clear to most instructors.	2.71*	.92	2.0	21.5	2.46	.82	2.0	13	1.89*	.33	2.0	7	2.44	14
49. The instructional goals of this program are clear to most students.	3.35*	.86	3.0	40	3.00	1.18	3.0	32	2.33*	.71	2.0	21	3.00	37.5
50. The content of the curriculum in this program articulates will with that of other programs at AVC.	2.82	.64	3.0	29.5	2.64	.81	3.0	20	2.78	.67	3.0	36	2.76	27.5
51. Students leaving this program usually have a realistic understanding of their academic abilities.	2.71*	.77	3.0	21.5	2.46	.93	2.0	13	2.00*	0.0	2.0	12	2.46	15

Staff Questionnaire Results (Continued)

	Basic Education (n=17)				High School (n=11)				RNA (n=9)				Total	
	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	S.D.	Median	Rank	Mean	Rank
52. When curriculum development activities are completed, staff are usually informed adequately about them.	2.71*	1.05	2.0	21.5	3.00**	1.48	2.0	32	1.78***	.44	2.0	3	2.57	20
53. The procedure for proposing curriculum development projects in this program is clear to staff.	3.59*	.71	4.0	46	3.09	.94	3.0	41	2.33*	.71	2.0	21	3.13	43
54. Staff regard curriculum development as part of their instructional duties.	2.59	1.06	2.0	15.5	3.00	1.00	3.0	32	2.22	.83	2.0	16	2.62	21.5
55. Staff who work on curriculum development projects receive adequate recognition for their efforts.	2.82	.95	3.0	29.5	3.36*	.81	3.0	49	2.33*	.71	2.0	21	2.83	30

QUESTIONS FOR DISCUSSION

Concerning Questionnaire Item Number:	
1	What are the pros and cons of individualized instruction? How available should the option be?
4	Is isolation of the student inevitable in individualized instruction? (See also item 5).
7	How can individualized instruction be tested?
9	Would any outside assistance be helpful? (See also item 45.)
10	Why are present courses not suited to parttime learners?
12	High School: What methods should be used?
17	Basic Education: What is needed to increase awareness?
23	Basic Education: Why is well-planned change not possible under usual conditions?
24	Why is change not planned effectively?
26	What evaluation information is needed?
28	What changes to inservice practices should be made?
34	How can the instructor's role be clarified?
41	What responsibilities can the student be given?
47	How much standardization is desirable?
53	What could be done to clarify these procedures?
55	What should be done to provide adequate recognition?

What is your reaction to this:

"There are many versions of mastery learning in existence at present. All begin with the notion that most students can attain a high level of learning capability if instruction is approached sensitively and systematically, if students are helped when and where they have learning difficulties, if they are given sufficient time to achieve mastery, and if there is some clear criterion of what constitutes mastery." (B. Bloom, Human Characteristics and School Learning. Toronto: McGraw-Hill, 1976, p. 4).

APPENDIX D

Total Task Analysis

Communication Analysis

Analysis of Materials, Methods

Total Task Analysis

Directions: Please respond to each of the following questions using the following code. Also, supply any comments you can to explain the reasons for your response.

Code:
Yes, definitely
Yes
Not sure; no comment; not applicable
No
No, definitely

1. Are the results of this project useful to students in the course for which they were developed?
2. Would a similar project be useful in any other courses?
3. Would other instructors be interested in participating in a similar project?
4. Do you have time (without released time) to develop this project further?
5. Do you have the interest to develop this project further?
6. Is this project compatible with the goals of the department?
7. Is the subject of this project a recognized priority of the department?
8. Is the subject of this project already being addressed by other means in the department?
9. Has this project sufficiently addressed the need, or is further development required?

Communication Analysis

Directions: The following questions refer to the way you and the researcher communicated and interacted during the project in which you participated. Please use the following code to respond to each question, and supply any comments you can about the reasons for your rating.

Code:
Yes, definitely
Yes
Not sure; no comment; not applicable
No
No, definitely

1. Was the need or problem the project addressed clear to you?
2. Did you meet often enough?
3. Were your meetings long enough?
4. Were your meetings efficient?
5. Was the purpose and outcome of the meetings clear to you?
6. Were your ideas about the project well-received?
7. Were your questions or reservations addressed?
8. Did you have a large enough role in the project?
9 Did your role in the project satisfy you?
10. Was the project worth the time you spent on it?

Analysis of Materials, Methods

Directions: Please rate each of the following components of the project in which you participated, and provide any comments you can about the reasons for your rating.

Ratings:
Excellent
Very Good
Good
Fair
Poor
Not sure; no comment

1. Needs statement
2. Pretest
3. Objectives
4. Instructional modules
5. Exercises
6. Posttest
7. Comprehensive tests
8. PLATO components
9. Student records, profiles
10. Student orientation
11. Classroom activities
12. Other materials, methods

APPENDIX E

Decimals Objectives

Fractions Objectives

DECIMALS OBJECTIVES

Objective

A When you are given a multi digit decimal number, you should be able to identify the place value of individual digits in the number. (Example: What is the place value of the 8 in this number: 3,218.790? Answer: ones).

B You should be able to write the FRACTION form of DECIMALS. (Example: .3 = $^{3}/_{10}$; .03 = $^{3}/_{100}$; .003 = $^{3}/_{1000}$).

C You should be able to write the DECIMAL form of fractions with a denominator of 10, 100, or 1000. (Example: $^{16}/_{100}$ = ? Answer: .16).

D You should be able to write the FRACTION or DECIMAL which is described in word form.

(Example: thirty-five thousandths = $^{35}/_{1000}$ .035).

E You should be able to tell which of two DECIMALS is greater (or you should be able to tell that they are equal).

(Example: Which of these decimals is greater? .235 or .400 Answer: .400 (four thousandths) is greater).

F* You should be able to change a whole number to a DECIMAL by adding the DECIMAL POINT and a ZERO to the whole number.

(Example 4 = 4 0).

G* You should be able to change a DECIMAL to a FRACTION.

(Example: .5 = ? Answer: .5 = $^{5}/_{10}$).

H You should be able to change a FRACTION to a DECIMAL.

(Example: $^{3}/_{4}$ = ? Answer: $^{3}/_{4}$ = .75).

I You should be able to ROUND OFF decimals to the nearest tenth, hundredth, or thousandth.

(Example: .16 to the nearest tenth = .2).

J You should be able to ADD DECIMALS of two or more addends, with correct placement of the decimal point.

(Example: 5.14 + 12.89 + .45 = ? Answer: 18.48).

K You should be able to SUBTRACT DECIMALS, with correct placement of the decimal point.

(Example: 82.15 - 16.5 = ? Answer 65.65).

L You should be able to SUBTRACT a DECIMAL from a WHOLE NUMBER.

(Example: 16 - 11.45 = ? Answer: 4.55).

*Optional

M You should be able to MULTIPLY a DECIMAL by a WHOLE NUMBER.
(Example: 2.56 x 6 = ? Answer: 15.36).

N You should be able to MULTIPLY a DECIMAL by a DECIMAL.
(Example: 7.5 x 2.5 = ? Answer: 18.75).

O You should be able to PREFIX (ADD) ZEROES to the RIGHT of the DECIMAL POINT in the product of a multiplication problem, when required for a correct place value in the answer.
(Example: .5 x .15 = ? Answer: .075).

P You should be able to DIVIDE a DECIMAL by a WHOLE NUMBER.
(Example: 6.72 ÷ 2 = ? Answer: 3.36).

Q You should be able to DIVIDE a WHOLE NUMBER by a DECIMAL.
(Example: 3 ÷ 1.5 = ? Answer: 2).

R You should be able to DIVIDE a DECIMAL by a DECIMAL.
(Example: 7.2 ÷ .8 = ? Answer: 9).

S You should be able to DIVIDE two DECIMALS, and ROUND OFF the answer as directed.
(Example: Divide and round to the nearest tenth: 18.5 ÷ .3 = ? Answer: 61.7).

T You should be able to change a FRACTION to a DECIMAL when the denominator does not divide evenly into 10, 100, or 1000.
(Example: Change $^{7}/_{9}$ to a decimal: .77).

FRACTIONS OBJECTIVES

Introduction

A You should be able to write a fraction telling what part of an object, or a group of objects, is shown in an example. (Example: You will be shown a picture and asked, "What part of this object (or group of objects) is shaded?")

B When you are given a fraction that can be simplified, you should be able to simplify it to its lowest terms.
(Example: 4/8 = ? Answer: 1/2).

C You should be able to write a fraction in higher terms when you are given the denominator of the new fraction.
(Example: 1/4 = ?/16. Answer: 4/16).

D When you are given a fraction, you should be able to write a whole number or a mixed number that is equivalent to it.
(Example: 8/4 = ? Answer: 2
6/5 = ? Answer: 1 1/5).

E When you are given a mixed number, you should be able to write an improper fraction that is equivalent to it.
(Example: 3 1/2 = ?/2. Answer: 7/2).

F You should be able to round off a fraction to the nearest whole number, and use this skill to estimate the answer to various problems.
(Example: Round off the following fractions, and estimate the answer: 2 1/3 x 4 3/5 = ?
Answer: 2 1/3 (rounded off) = 2, 4 3/5 (rounded off) = 5, so: 2 x 5 = 10 (estimated answer).

Addition

G You should be able to add fractions which have LIKE (same) DENOMINATORS, and reduce the answer to the simplest form.
(Example: 1/5 + 3/5 = ? Answer: 4/5).

H You should be able to add MIXED NUMBERS with LIKE (same) DENOMINATORS, and reduce the answer to the simplest form.
(Example: 2 1/4 + 3 1/4 = ? Answer: 5 1/2).

I You should be able to add a whole number to a mixed number
(Example: 2 + 1 1/2 = ? Answer: 3 1/2).

J You should be able to add fractions with UNLIKE (different) denominators, and reduce the answer to the simplest form.
(Example: 2/3 + 3/4 = ? Answer: 1 5/12).

K You should be able to add MIXED NUMBERS, and reduce the answer to the simplest form.
(Example: 1 3/4 + 2 2/3 = ? Answer: 4 5/12).

Subtraction

L	You should be able to SUBTRACT proper fractions with LIKE (same) denominators, and SIMPLIFY the answer, if necessary. (Example: 2/3 - 1/3 = ? Answer: 1/3).
M	You should be able to SUBTRACT proper fractions with UNLIKE (different) denominators, and simplify the answer. (Example: 3/7 - 1/5 = ? Answer: 3/5).
N	You should be able to SUBTRACT a proper fraction from a mixed number, and simplify the answer, if it needs it. (Example: 4 3/8 - 3/4 = ? Answer: 3 5/8).
O	You should be able to SUBTRACT a mixed number from a whole number, and simplify the answer, if needed. (Example: 4 - 1 1/2 = ? Answer: 2 1/2.)
P	You should be able to subtract 2 mixed numbers and simplify the answer, if possible. (Example: 4 1/4 - 2 1/2 = ? Answer: 1 3/4).

Multiplication

Q	You should be able to MULTIPLY 2 proper fractions, and simplify the answer, if possible. (Example: 1/2 x 1/4 = ? Answer: 1/8).
R	You should be able to MULTIPLY a MIXED NUMBER and a PROPER fraction, and SIMPLIFY the result, if possible. (Example: 1 3/4 x 5/8 = ? Answer: 1 3/32).
S	You should be able to MULTIPLY a whole number and a proper fraction, and SIMPLIFY the answer, if possible. (Example: 5 x 3/4 = ? Answer: 3 3/4).
T	You should be able to MULTIPLY a WHOLE NUMBER and a MIXED NUMBER, and SIMPLIFY the answer, if possible. (Example: 2 3/8 x 4 = ? Answer: 9 1/2).
U	You should be able to MULTIPLY 2 MIXED NUMBERS, and SIMPLIFY the answer, if possible. (Example: 2 1/2 x 3 1/3 = ? Answer: 8 1/3).

Division

V You should be able to DIVIDE two proper fractions, and simplify the answer, if possible.
(Example: 3/4 ÷ 1/2 = ? Answer: 1 1/2).

W You should be able to DIVIDE a WHOLE NUMBER by a proper fraction, and SIMPLIFY the answer, if possible.
(Example: 15 ÷ 3/4 = ? Answer: 20).

X You should be able to DIVIDE a MIXED NUMBER by a proper fraction, and SIMPLIFY the answer, if possible.
(Example: 2 1/2 ÷ 3/4 = ? Answer: 3 1/3).

Y You should be able to DIVIDE a WHOLE NUMBER by a MIXED NUMBER, and SIMPLIFY the answer, if possible.
(Example: 3 ÷ 1 1/2 = ? Answer: 2).

Z You should be able to DIVIDE two MIXED NUMBERS, and simplify the answer, if possible.
(Example: 2 1/2 ÷ 1 1/2 = ? Answer: 1 2/3).

APPENDIX F

Introduction to Decimals: Pretest

Introduction to Fractions: Pretest

Fractions Pretest: Addition

Fractions Pretest: Subtraction

Fractions Pretest: Multiplication

Fractions Pretest: Division

INTRODUCTION TO DECIMALS

Pretest

Name ____________________

Date ____________________

Directions: Please answer as many of the following questions as you can. Read the directions which go with each question. If you do not understand a question, ask for help from the instructor.

You CANNOT FAIL this test -- it is used to tell you and your instructor where you should start your study of Decimals.

When you finish as much of the test as you can do, bring the test to the instructor.

* * * * * * * *

A

____

M N

1. What is the place name of the 2 in this number? (Circle one)

1,368.523

thousands hundreds tens ones tenths

hundredths thousandths

2. What is the place name of the 6 in this number? (Circle one)

2 571.436

thousands hundreds tens ones tenths

hundredths thousandths

B

____

M N

WRITE these decimals as fractions:

3. .7 = __________

4. .02 = __________

5. .008 = __________

C

____

M N

WRITE these fractions as decimals:

6. $^{3}/_{10}$ = __________

7. $^{25}/_{100}$ = __________

8. $^{35}/_{1000}$ = __________

D	WRITE the following as decimal numbers:
____	9. seventeen hundredths = ____________
M N	10. five tenths = ____________
	11. fifteen thousandths = ____________
- - - - - - - -	
E	Which decimal number is larger? (If they are equal, circle equal)
____	12. .35 or .350 EQUAL
M N	13. .07 or .7 EQUAL
	14. .04 or .004 EQUAL
- - - - - - - -	
H	CHANGE the following whole numbers to decimal numbers by adding a decimal point and a zero:
____	15. 14 = __________
M N	16. 6 = __________
- - - - - - - -	
I	ROUND OFF these decimal numbers as indicated:
____	17. Round off .17 to the nearest tenth: __________
M N	18. Round off .266 to the nearest thousandth: __________
- - - - - - - -	
J	ADD:
____	19. 2.14 + 18.6 = __________
M N	20. .75 + 1.4 + 26.35 = __________
- - - - - - - -	
K	SUBTRACT:
____	21. 16.81 - 8.54 = __________
M N	22. 11.2 - 6.84 = __________

L	SUBTRACT:
______	23. 5 - 2.6 = __________
M N	24. 19 - 11.76 = __________
M	MULTIPLY:
______	25. 5.7 x 2 = __________
M N	26. 16.95 x 5 __________
N	MULTIPLY:
______	27. 6.6 x 1.8 = __________
M N	28. 14.82 x 7.51 = __________
O	MULTIPLY:
______	29. .16 x .2 = __________
M N	30. .21 x .4 = __________
P	DIVIDE:
______	31. 9.42 ÷ 2 = __________
M N	32. 16.86 ÷ 4 = __________
Q	DIVIDE:
______	33. 9 ÷ 1.5 = __________
M N	34. 15 ÷ 1.25 = __________

R

M N

DIVIDE:

35. 3.6 ÷ .4 = ________

36. 8.1 ÷ .9 = ________

S

M N

DIVIDE and ROUND OFF your answer to the nearest hundredth:

37. 8.5 ÷ 2.8 = ________

38. 6.5 ÷ 2.3 = ________

T

M N

CHANGE these fractions to decimals, and round off the answer to the nearest hundredth, if necessary:

39. $^{1}/_{6}$ = ________

40. $^{3}/_{8}$ = ________

INTRODUCTION TO FRACTIONS

Pretest

Name ____________________

Date ____________________

Directions: Try to answer as many questions as possible. YOU CANNOT FAIL THIS TEST! When you feel you have done all you can, hand the paper in. Your instructor will give you the results and tell you where to begin your study of Fractions.

Good luck!

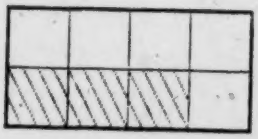
* * * * * * * * *

Obj. A

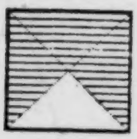
______

M N

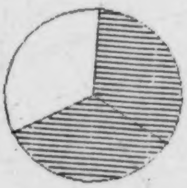
1. How much of these figures is shaded?



A. ________

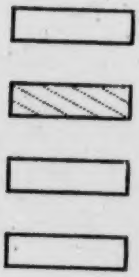


B. ________

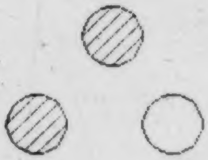


C. ________

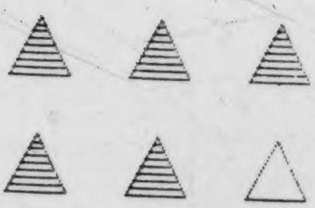
2. What fraction of each group is shaded?



A. ______



B. ______



C. ______

Obj. B

______

M N

3. Simplify the following fractions to their lowest terms:

A. $\frac{5}{10}$ = ________

B. $\frac{3}{12}$ = ________

C. $\frac{12}{16}$ = ________

D. $\frac{20}{25}$ = ________

Obj. C

______

M N

4. Write the following fractions in higher terms using the denominator given:

A. $\frac{1}{2} = \frac{\_\_\_\_}{8}$ C. $\frac{3}{4} = \frac{\_\_\_\_}{20}$

B. $\frac{2}{3} = \frac{\_\_\_\_}{9}$ D. $\frac{2}{5} = \frac{\_\_\_\_}{15}$

- - - - - - -

Obj. D

______

M N

5. Write the whole number which is equivalent to the following improper fractions:

A. $\frac{6}{3}$ = ________ C. $\frac{12}{2}$ = ________

B. $\frac{8}{4}$ = ________ D. $\frac{25}{5}$ = ________

- - - - - - -

6. Write the mixed number which is equivalent to the following improper fractions:

A. $\frac{7}{4}$ = ________ C. $\frac{11}{3}$ = ________

B. $\frac{9}{5}$ = ________ D. $\frac{17}{5}$ = ________

- - - - - - -

Obj. E

______

M N

7. Write the following mixed numbers as improper fractions:

A. $2\frac{1}{2} = \frac{\_\_\_\_}{2}$ C. $2\frac{5}{8} = \frac{\_\_\_\_}{8}$

B. $1\frac{3}{4} = \frac{\_\_\_\_}{4}$ D. $1\frac{1}{16} = \frac{\_\_\_\_}{16}$

- - - - - - -

Obj. F

______

M N

8. Round off to the nearest whole number:

A. $1\frac{4}{5}$ = ________ C. $1\frac{11}{16}$ = ________

B. $3\frac{1}{3}$ = ________ D. $2\frac{5}{8}$ = ________

FRACTIONS: ADDITION

Name ______________________

Date ______________________

DO NOT
WRITE
HERE

Obj. G

______

M N

ADD:

1) $^{1}/_{7} + ^{2}/_{7} =$

2) $^{1}/_{4} + ^{2}/_{4} =$

3) $^{2}/_{5} + ^{1}/_{5} =$

- - - - - - - - - - -

Obj. H

______

M N

ADD:

4) $2\,^{1}/_{4} + 1\,^{1}/_{4} =$

5) $3\,^{1}/_{6} + 1\,^{3}/_{6} =$

6) $2\,^{5}/_{8} + 3\,^{1}/_{8} =$

- - - - - - - - - - -

Obj. I

______

M N

ADD:

7) $3 + 1\,^{1}/_{2} =$

8) $4 + 2\,^{1}/_{4} =$

9) $6 + 4\,^{3}/_{8} =$

- - - - - - - - - - -

Obj. J

______

M N

ADD:

10) $^{1}/_{2} + ^{1}/_{4} =$

11) $^{2}/_{5} + ^{1}/_{3} =$

12) $^{1}/_{8} + ^{1}/_{4} =$

DO NOT
WRITE
HERE

Obj. K

M N

ADD:

13) $2\,^{3}/_{4} + 1\,^{1}/_{8} =$

14) $3\,^{1}/_{3} + 2\,^{3}/_{4} =$

15) $3\,^{3}/_{5} + 1\,^{3}/_{10} =$

FRACTIONS: SUBTRACTION

Name ____________________

Date ____________________

DO NOT
WRITE
HERE

Obj. L

______

M N

SUBTRACT:

1) $^{3}/_{4} - ^{1}/_{4} =$

2) $^{5}/_{6} - ^{4}/_{6} =$

3) $^{9}/_{10} - ^{6}/_{10} =$

Obj. M

______

M N

SUBTRACT:

4) $^{3}/_{4} - ^{1}/_{2} =$

5) $^{4}/_{5} - ^{2}/_{3} =$

6) $^{3}/_{8} - ^{1}/_{4} =$

Obj. N

______

M N

SUBTRACT:

7) $3\,^{5}/_{8} - ^{1}/_{2} =$

8) $2\,^{5}/_{6} - ^{3}/_{4} =$

9) $6\,^{2}/_{3} - ^{1}/_{5} =$

Obj. O

______

M N

SUBTRACT:

10) $9 - 6\,^{2}/_{3} =$

11) $4 - 1\,^{1}/_{6} =$

12) $3 - 2\,^{3}/_{4} =$

DO NOT
WRITE
HERE

Obj. P

M N

SUBTRACT:

13) $4\,{}^{7}/_{8} - 2\,{}^{1}/_{4} =$

14) $3\,{}^{5}/_{6} - 1\,{}^{1}/_{2} =$

15) $6\,{}^{3}/_{4} - 4\,{}^{2}/_{3} =$

FRACTIONS: MULTIPLICATION

Name ____________________

Date ____________________

Obj. Q

______

M N

MULTIPLY:

1) $^1/_4 \times ^1/_3 =$

2) $^1/_2 \times ^2/_3 =$

3) $^3/_8 \times ^4/_5 =$

Obj. R

______

M N

MULTIPLY:

4) $2\,^1/_2 \times ^3/_4 =$

5) $3\,^2/_3 \times ^1/_2 =$

6) $5\,^5/_8 \times ^1/_5 =$

Obj. S

______

M N

MULTIPLY:

7) $2 \times ^1/_2 =$

8) $3 \times ^3/_8 =$

9) $5 \times ^2/_3 =$

Obj. T

______

M N

MULTIPLY:

10) $2\,^4/_5 \times 2 =$

11) $3\,^2/_3 \times 5 =$

12) $1\,^1/_4 \times 3 =$

DO NOT
WRITE
HERE

Obj. U

M N

MULTIPLY:

13) $2\,^{2}/_{3} \times 1\,^{1}/_{4} =$

14) $3\,^{3}/_{4} \times 2\,^{4}/_{5} =$

15) $2\,^{2}/_{5} \times 2\,^{5}/_{8} =$

FRACTIONS: DIVISION

Name ____________________

Date ____________________

Obj. V

______

M N

DIVIDE:

1) ${}^{2}/_{3} \div {}^{1}/_{2} =$

2) ${}^{3}/_{4} \div {}^{2}/_{5} =$

3) ${}^{3}/_{8} \div {}^{1}/_{3} =$

Obj. W

______

M N

DIVIDE:

4) $10 \div {}^{1}/_{4} =$

5) $12 \div {}^{2}/_{3} =$

6) $6 \div {}^{1}/_{2} =$

Obj. X

______

M N

DIVIDE:

7) $2\,{}^{1}/_{2} \div {}^{3}/_{4} =$

8) $3\,{}^{1}/_{4} \div {}^{2}/_{3} =$

9) $5\,{}^{3}/_{8} \div {}^{1}/_{4} =$

Obj. Y

______

M N

DIVIDE:

10) $10 \div 2\,{}^{1}/_{2} =$

11) $12 \div 4\,{}^{1}/_{3} =$

12) $5 \div 1\,{}^{4}/_{5} =$

DO NOT
WRITE
HERE

Obj. Z

M N

DIVIDE:

13) $2\ ^{1}/_{4} \div 3\ ^{1}/_{2} =$

14) $3\ ^{3}/_{5} \div 2\ ^{2}/_{3} =$

15) $5\ ^{3}/_{8} \div 2\ ^{5}/_{6} =$

APPENDIX G

Instructional Module: Introduction to Fractions

FRACTIONS

Module A

INTRODUCTION TO FRACTIONS

Objective A

You should be able to WRITE A FRACTION telling what part of an object, or a group of objects, is asked for in a diagram.

Example: You will be shown a picture and asked, "What fraction of this object is shaded?"

or

You will be shown a group of objects and asked, "What fraction of these objects are round?"

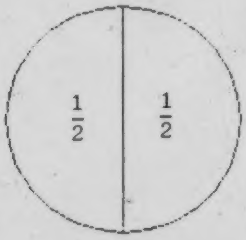
FRACTIONS

Module A

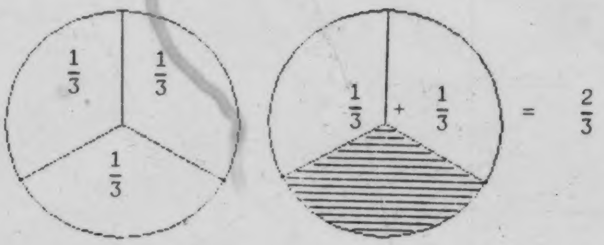
INTRODUCTION TO FRACTIONS

What is a fraction?

A FRACTION IS ONE OR MORE EQUAL PARTS OF ANYTHING.



When a pie is cut into 2 equal parts, each part is one-half of the pie.



When a pie is cut into 3 equal parts, each part is 1/3 (one-third) of the pie. Two of these parts is 2/3 (two-thirds) of the pie.

Parts of a fraction.

Numerator —— 1 ← This part tells how many parts there are.

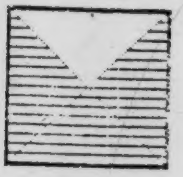
Denominator —— 2 ← This part tells how many parts the whole is divided into.

A fraction may be written like this ½, or $\frac{1}{2}$, or 1/2.

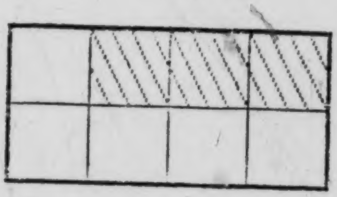
EXERCISES

Objective A

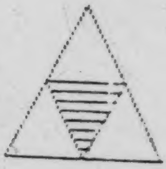
Exercise A - 1: Write a fraction to tell what part of each figure is shaded.



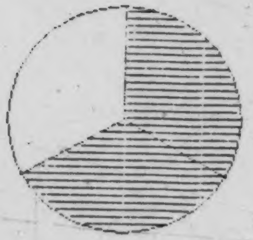
A. ________



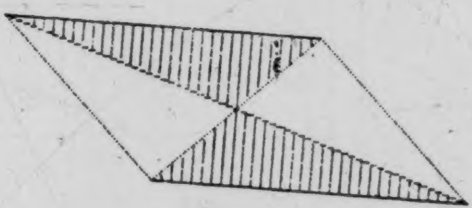
B. ________



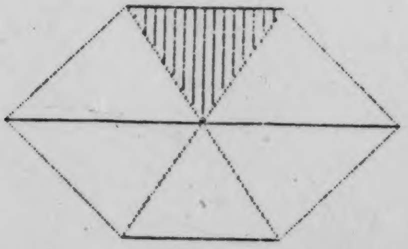
C. ________



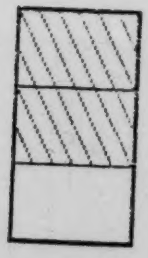
D. ________



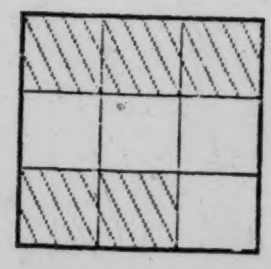
E. ________



F. ________



G. ________



H. ________

KEY - Exercise A - 1

A. 3/4

B. 3/8

C. 1/4

D. 2/3

E. 2/4 or 1/2

F. 1/6

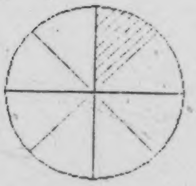
G. 2/3

H. 5/9

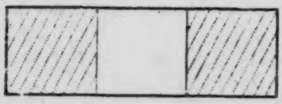
EXERCISES

Objective A

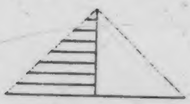
Exercise A - 2: Write a fraction to tell what part of each figure is shaded.



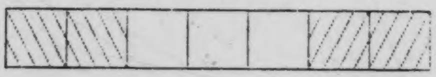
A. ________



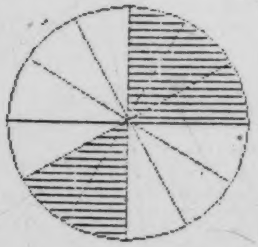
B. ________



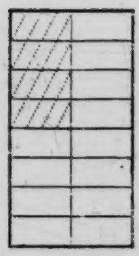
C. ________



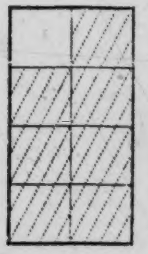
D. ________



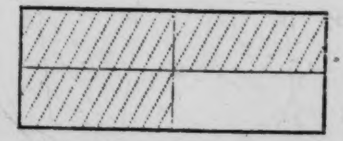
E. ________



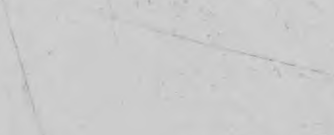
F. ________



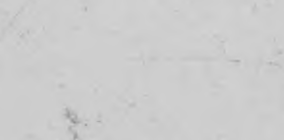
G. ________



H. ________



I. ________



J. ________

KEY - Exercise A - 2

A. 1/8

B. 2/3

C. 1/2

D. 4/7

E. 5/12

F. 4/16 or 1/4

G. 7/8

H. 3/4

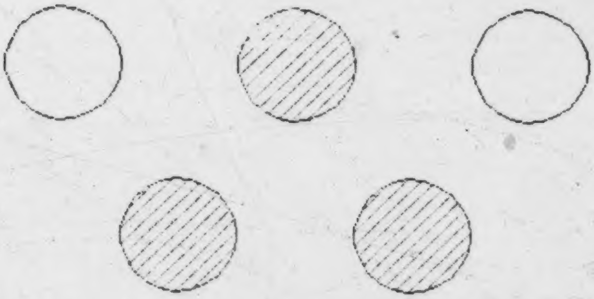
I. 3/10

J. 5/12

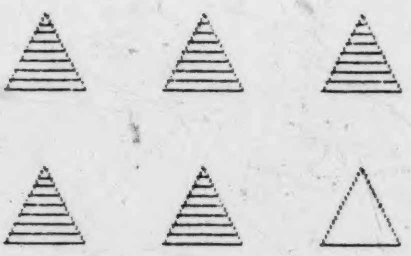
EXERCISES

Objective A

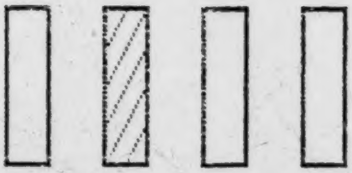
Exercise A - 3: Write a fraction to tell what part of each group is shaded.



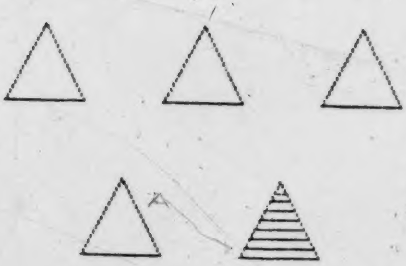
A. ______



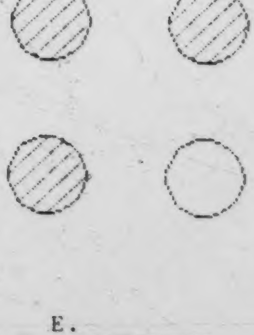
B. ______



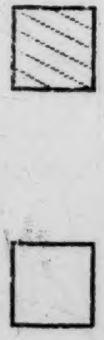
C. ______



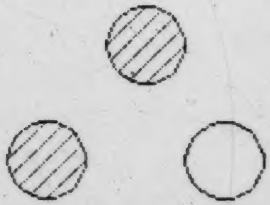
D. ______



E. ______



F. ______



G. ______

KEY -- Exercise A - 3

A. 3/5

B. 5/6

C. 1/4

D. 1/5

E. 3/4

F. 1/2

G. 2/3

EXERCISES

Objective A

Exercise A - 4: Write the following fractions. (KEY is on the back)

A. Numerator = 4, Denominator = 5 ________

B. Numerator = 1, Denominator = 6 ________

C. Numerator = 3, Denominator = 8 ________

D. Denominator = 100, Numerator = 5 ________

E. Denominator = 98, Numerator = 18 ________

KEY -- Objective A - 4

A. 4/5

B. 1/6

C. 3/8

D. 5/100

E. 18/98

APPENDIX H

Fractions Comprehensive Test 1: (Objectives A - F)

Fractions Comprehensive Test 2: (Objectives G - P)

Fractions Comprehensive Test 3: (Objectives Q - Z)

Decimals Comprehensive Test 1

Decimals Comprehensive Test 2

INTRODUCTION TO FRACTIONS

Comprehensive Test 1

(Objectives A - F)

Name ______________

Date ______________

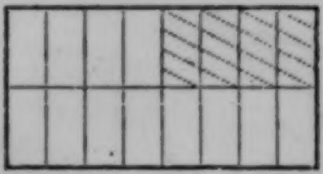
Obj. A

____

M N

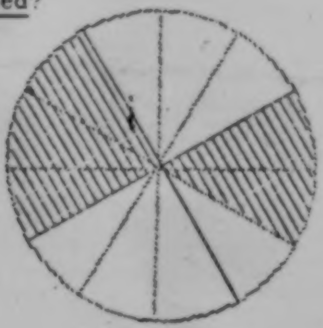
1. How much of this figure is shaded?

Answer: ______



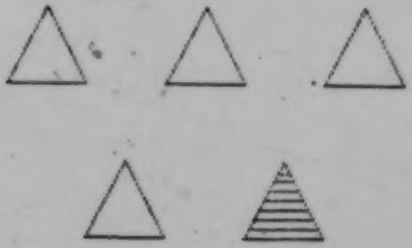
2. How much of this figure is shaded?

Answer: ______



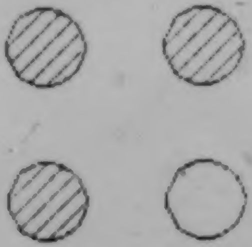
3. What fraction of this group of objects is shaded?

Answer: ______



4. What fraction of this group of objects is shaded?

Answer: ______



Obj. B

______

M N

5. SIMPLIFY the following fractions to the lowest form:

a) $^4/_{16}$ = ______

b) $^4/_8$ = ______

Obj. C

______

M N

6. Write these fractions in higher terms, using the denominator given:

a) $^1/_4$ = $\frac{\_\_\_\_}{12}$

b) $^3/_5$ = $\frac{\_\_\_\_}{15}$

Obj. D

______

M N

7. Write the whole number or mixed number which is equivalent to the following fractions:

a) $^9/_3$ = ______

b) $^3/_2$ = ______

c) $^{10}/_2$ = ______

d) $^7/_3$ = ______

Obj. E

______

M N

8. Change the following mixed numbers to improper fractions:

a) $4\ ^1/_3$ = $\frac{\_\_\_\_}{3}$

b) $1\ ^3/_5$ = $\frac{\_\_\_\_}{5}$

Obj. F

______

M N

9. Round off the following fractions, and estimate the answer:

a) $1\ ^3/_{16} + 2\ ^7/_{16}$ = ______

b) $2\ ^3/_4 + 2\ ^3/_5$ = ______

c) $6\ ^5/_8 - 1\ ^1/_3$ = ______

d) $2\ ^7/_8 \times 4\ ^1/_4$ = ______

ADDITION AND SUBTRACTION OF FRACTIONS

Comprehensive Test 2

(Objectives G - P)

Name ____________________

ADD:

Obj. G

1. $^2/_5 + {}^2/_5 =$

2. $^1/_8 + {}^5/_8 =$

______

M N

3. $^3/_7 + {}^2/_7 =$

- - - - - - - - -

Obj. H

4. $3\,^3/_5 + 2\,^1/_5 =$

______

5. $1\,^2/_8 + 2\,^5/_8 =$

M N

6. $1\,^4/_9 + 2\,^3/_9 =$

- - - - - - - - -

Obj. I

7. $4 + 2\,^1/_3 =$

______

8. $2 + 3\,^3/_4 =$

M N

9. $5 + 2\,^7/_8 =$

- - - - - - - - -

Obj. J

10. $^2/_3 + {}^3/_4 =$

______

11. $^1/_2 + {}^5/_8 =$

M N

12. $^1/_4 + {}^1/_3 =$

- - - - - - - - -

Obj. K

13. $1\,^3/_8 + 3\,^3/_4 =$

______

14. $2\,^5/_6 + 4\,^1/_2 =$

M N

15. $3\,^2/_3 + 4\,^1/_5 =$

SUBTRACT:

Obj. L

1. $^{5}/_{8} - ^{1}/_{8} =$

____

M N

2. $^{4}/_{7} \quad ^{2}/_{7} =$

3. $^{3}/_{4} - ^{2}/_{4} =$

- - - - - - - - -

Obj. M

4. $^{5}/_{6} - ^{1}/_{3} =$

____

M N

5. $^{3}/_{8} - ^{1}/_{4} =$

6. $^{3}/_{4} - ^{1}/_{5} =$

- - - - - - - - -

Obj. N

7. $2\,^{1}/_{4} - ^{1}/_{2} =$

____

M N

8. $1\,^{5}/_{8} - ^{1}/_{4} =$

9. $3\,^{3}/_{5} - 1\,^{3}/_{4} =$

- - - - - - - - -

Obj. O

10. $7 \quad 5\,^{1}/_{2} =$

____

M N

11. $6 - 2\,^{3}/_{8} =$

12. $3 - 1\,^{1}/_{5} =$

- - - - - - - - -

Obj. P

13. $3\,^{1}/_{5} - 2\,^{3}/_{4} =$

____

M N

14. $4\,^{5}/_{8} - 1\,^{1}/_{4} =$

15. $3\,^{2}/_{3} - 1\,^{1}/_{6} =$

MULTIPLICATION AND DIVISION OF FRACTIONS

Comprehensive Test 3

(Objectives Q - Z)

Name ____________________

MULTIPLY AND SIMPLIFY:

Obj. Q

1. $\frac{3}{4} \times \frac{1}{3} =$

____

M N

2. $\frac{1}{2} \times \frac{1}{4} =$

3. $\frac{3}{8} \times \frac{4}{5} =$

Obj. R

4. $1\frac{3}{4} \times \frac{1}{8} =$

____

5. $2\frac{2}{5} \times \frac{3}{4} =$

M N

6. $4\frac{1}{4} \times \frac{2}{3} =$

Obj. S

7 $2 \times \frac{2}{3} =$

____

8. $4 \times \frac{3}{8} =$

M N

9. $3 \times \frac{3}{4} =$

Obj. T

10. $3\frac{1}{5} \times 3 =$

____

11. $2\frac{3}{4} \times 2 =$

M N

12. $4\frac{2}{3} \times 3 =$

Obj. U

13. $2\frac{1}{4} \times 1\frac{3}{4} =$

____

14. $3\frac{3}{4} \times 2\frac{5}{8} =$

M N

15. $4\frac{4}{5} \times 2\frac{2}{3} =$

DIVIDE AND SIMPLIFY:

Obj. V 1. ${}^{1}/_{2} \div {}^{1}/_{4} =$

________ 2. ${}^{2}/_{3} \div {}^{1}/_{5} =$

M N

3. ${}^{3}/_{4} \div {}^{2}/_{5} =$

- - - - - - - -

Obj. W 4. $12 \div {}^{2}/_{3} =$

________ 5. $9 \div {}^{1}/_{3} =$

M N

6. $10 \div {}^{4}/_{5} =$

- - - - - - - -

Obj. X 7. $2\,{}^{3}/_{4} \div {}^{2}/_{3} =$

________ 8. $3\,{}^{2}/_{3} \div {}^{3}/_{4} =$

M N

9. $4\,{}^{4}/_{5} \div {}^{1}/_{2} =$

- - - - - - - -

Obj. Y 10. $6 \div 1\,{}^{1}/_{3} =$

________ 11. $5 \div 2\,{}^{1}/_{2} =$

M N

12. $8 \div 2\,{}^{3}/_{4} =$

- - - - - - - -

Obj. Z 13. $3\,{}^{1}/_{4} \div 2\,{}^{1}/_{2} =$

________ 14. $2\,{}^{5}/_{8} \div 3\,{}^{3}/_{4} =$

M N

15. $4\,{}^{1}/_{4} \div 2\,{}^{3}/_{5} =$

DECIMALS

Comprehensive Test 1

Name ________________

Date ________________

A

M N

1. What is the place name of the 4 in this number? (Circle your answer):

8,742.651

thousands	hundreds	tens	ones
thousandths	hundredths	tenths	

2. What is the place name of the 9 in this number? (Circle your answer):

4,321.9786

thousands	hundreds	tens	ones
thousandths	hundredths	tenths	

B

M N

Write the following decimals as fractions:

	Decimal		Fraction
3.	.35	=	______
4.	.80	=	______
5.	.125	=	______

C

M N

Write the following fractions as decimals:

	Fraction		Decimal
6.	$^{9}/_{10}$	=	______
7.	$^{355}/_{1000}$	=	______
8.	$^{99}/_{100}$	=	______

D

M N

Write each of the following as a decimal fraction and as a fraction:

			Fraction	Decimal Fraction
9.	thirty-five hundredths	=	______	______
10.	one hundred thirty-five thousandths	=	______	______
11.	seven tenths	=	______	______

- - -

E

M N

Which of these numbers is greater? (Circle your choice. If they are equal circle equal):

12. .17 or .017 EQUAL

13. .25 or .250 EQUAL

14. .95 or 95.0 EQUAL

- - -

H

M N

Change these whole numbers to decimals by adding a decimal point and zero:

	Whole number		Decimal
15.	50	=	______
16.	1	=	______

- - -

I

M N

Round off the following numbers as directed:

17. Round off .29 to the nearest tenth: = ______

18. Round off 1.75 to the nearest whole number: = ______

19. Round off .5361 to the nearest thousandth: = ______

20. Round off .666 to the nearest hundredth: = ______

DECIMALS

Comprehensive Test 2

Name ____________________

Date ____________________

J ADD these decimals:

____ 1. .75 + 1.6 = ______

M N 2. .05 + 5 + .073 = ______

3. 3.6 + .007 = ______

- - -

K SUBTRACT these decimals:

____ 4. 6.21 - 2.5 = ______

M N 5. .511 - .06 = ______

6. .4 - .066 = ______

- - -

L SUBTRACT these decimals:

____ 7. 9 - 2.6 = ______

M N 8. 4 - .67 = ______

- - -

M MULTIPLY these decimals:

____ 9. 1.59 x 4 = ______

M N 10. 2.54 x 2 = ______

- - -

N MULTIPLY these decimals:

____ 11. 5.4 x 2.8 = ______

M N 12. .85 x 1.5 = ______

13. 2.58 x .79 = ______

- - -

O 14. .12 x .3 = ______

____ 15. .22 x .4 = ______

M N 16. .135 x .2 = ______

P	DIVIDE these decimals:
____	17. 8.42 ÷ 2 = ______
M N	18. 6.64 ÷ 8 = ______
	- - -
Q	19. 7 ÷ 3.5 = ______
____	20. 14 ÷ .4 = ______
M N	21. 6 ÷ .03 = ______
	- - -
R	22. 8.1 ÷ .9 = ______
____	23. 2.54 ÷ .02 = ______
M N	24. .056 ÷ .07 = ______
	- - -
S	DIVIDE and round off your answer as directed:
____	25. 1.75 ÷ 2.1 to the nearest hundredth = ______
M N	26. 24.35 ÷ 1.6 to the nearest hundredth = ______
	27. 9.18 ÷ 3 to the nearest tenth = ______
	- - -
T	Change each of the following fractions to a decimal. If necessary, round your answer to the nearest thousandth:
____	
M N	

Fraction		Decimal
$^1/_8$	=	______
$^5/_{12}$	=	______

APPENDIX I

Student Profile: Decimals

Student Profile: Fractions

STUDENT PROFILE

Decimals

Goal ____________________ Name ____________________

Second Goal ____________________ Q_1 Q_2 I_1 I_2

Objective	Pretest (M or N)	PLATO Mastery (Date)	Problem-Solving	Comprehensive Test (M or N)	Posttest (M or N)
A					
B					
C					
D					
E					
F*					
G*					
H					
I					

YOU SHOULD DO COMPREHENSIVE TEST #1, covering objectives A - I. Ask your instructor for the test when you feel ready for it.

J					
K					
L					
M					
N					
O					
P					
Q					
R					
S					
T					

YOU SHOULD DO COMPREHENSIVE TEST #2, covering objectives J - T. Ask your instructor for the test when you feel you are ready for it.

*These objectives are optional.

FRACTIONS

Student Profile

Goal ____________________

Second Goal ____________________

Name ____________________

Q_1 Q_2 I_1 I_2

Objective	Pretest Score	PLATO Mastery (date)	Drill Options	Comprehensive Test (M or N)	Posttest Score
A					
B					
C					
D					
E					
F					

You should ask your instructor for Comprehensive Test #1, covering objectives A - F. Do this test when you feel you are ready for it.

G					
H					
I					
J					
K					
L					
M					
N					
O					
P					

You should do Compresensive Test #2, covering objectives G - P. Do this test when you feel you are ready for it.

Q					
R					
S					
T					
U					
V					
W					
X					
Y					
Z					

You should ask your instructor for Comprehensive Test #3, covering objectives Q - Z. Do this test when you feel you are ready for it.

APPENDIX J

Word Choice Module Description

Student Profile

Pretest

Example Module

Posttest

Questionnaire

Word Choice Module

OBJECTIVE: The student should be able to use 75 often-confused words correctly.

HOW ELIGIBLE STUDENTS WILL BE IDENTIFIED: All students will complete a multiple-choice test. Students who score below ________ will be regarded as candidates for the module.

OTHER:

HOW SUCCESSFUL COMPLETION OF THE MODULE WILL BE DETERMINED:

Students who study the module will complete a multiple-choice posttest. A score of ________ will be considered mastery.

OTHER:

MATERIALS/RESOURCES:

-- Pre- and posttest: developed by Pat Fahy.
-- Instructional materials: The Least You Should Know About English, pp. 7 - 9, 13 - 16.
-- Exercises: The Least You Should Know About English, pp. 9 - 13, 16 - 19.
-- Other:

TIMETABLE:

1) Students will be pretested by ____________________.
2) Student profiles showing pretest results will be discussed by ____________________.
3) Students will commence study of the module on ____________________.
4) Students should complete study, and write the posttest on the module, by ____________________.

OTHER:

COMMENTS:

WORD CHOICE

Student Profile

Goal ______________________

Date ______________________

Name ______________________

Course ______________________

* * * * * * * *

Module	Words Tested		Study Needed? (= yes)	Study Exercises (= done)	PLATO Test (Date passed)	Posttest (Date passed)
A	1.1	of/have				
	1.2	course/coarse				
	1.3	affect/effect				
B	2.1	forth/fourth				
	2.2	compliment/complement				
	2.3	advice/advise				
C	3.1	accept/except				
	3.2	knew/new				
	3.3	break/brake				
D	4.1	are/our				
	4.2	desert/dessert				
	4.3	conscious/conscience				
E	5.1	its/it's				
	5.2	all ready/already				
	5.3	chose/choose				
F	6.1	does/dose				
	6.2	no/know				
	6.3	a/an				
G	7.1	led/lead				
	7.2	lose/loose				
	7.3	moral/morale				
H	8.1	passed/past				
	8.2	peace/piece				
	8.3	personal/personnel				
I	9.1	principle/principal				
	9.2	quiet/quite				
	9.3	than/then				
J	10.1	their/they're/there				
	10.2	to/too/two				
K	11.1	threw/through				
	11.2	whether/weather				
	11.3	were/where				
L	12.1	who's/whose				
	12.2	woman/women				
	12.3	you're/your				

WORD CHOICE

Pretest

Name __________________________

Date __________________________

Directions: In the space provided in each of the following sentences, write the word which correctly completes the sentence. YOU CANNOT FAIL THIS TEST! It will be used only to tell you and your instructor if you need to study this topic.

In some cases, the same word is used in both sentences.

If you have any questions, see your instructor for help.

* * * * * * *

A

Choices: of / have

1. They should _________ gotten here by now.
2. This is the best _______ all possible worlds.

Choices: course / coarse

3. The English __________ is twenty weeks long.
4. The plane flew miles off ________ before the pilot realized it.

Choices: affect / effect

5. The __________ of the fire was enormous.
6. Parents want school to have a positive _________ on their children.

B

Choices: forth / fourth

7. Business Education is on the __________ floor of AVC.
8. People put ________ the most effort in things they enjoy.

Choices: compliment / complement

9. The game was played in front of a full ______________ of fans.

10. It is sometimes hard to tell if a ______________ is sincere.

Choices: advice / advise

11. A banker can give financial ______________.

12. A banker can ______________ you about your finances.

C

Choices: accept / except

13. No one heard the phone ______________ me.

14. Will you ______________ the charges?

Choices: knew / new

15. The __________ schedule was posted this morning.

16. They couldn't agree to a deal on the __________ car.

Choices: break / brake

17. They take their lunch __________ at noon.

18. The __________ in the pipeline caused an oil spill.

D

Choices: are / our

19. Do you have ________ phone number?

20. When ________ tickets going on sale?

Choices: desert / dessert

21. Coffee and __________ were served after dinner.

22. Some people like a climate as dry as a ____________.

Choices: conscious / conscience

23. He was ______________ after the accident.

24. He had a guilty ______________ after the accident.

E

Choices: its / it's

25. The team brought ________ mascot on the bus.

26. The government gave __________ approval to the bill.

Choices: all ready / already

27. Some skiers are _________________ for snow in October.

28. By October, there was _______________ enough snow to ski.

Choices: chose / choose

29. They ______________ a captain before the first game yesterday.

30. The one they _____________ tomorrow will be captain until next game.

F

Choices: does / dose

31. When _________ the class end?

32. When will the ____________ be increased?

Choices: no / know

33. Do you __________ anyone who can drive a bus?

34. Whoever gets the job will __________ a lot.

Choices: a / an

35. This city has ______ university.

36. The company will provide you with ________ uniform.

G

Choices: led / lead

37. The path __________ into the woods.

38. The dog was able to ___________ the police to the suspect.

Choices: lose / loose

39. The fan belt was ____________.

40. We were about to _____________ the fanbelt.

Choices: moral / morale

41. After the accident the men's ______________ was low.

42. A starving man may feel he has a __________ right to steal food.

H Choices: passed / past

43. The group walked __________ the door talking loudly.

44. Everyone ___________ the test easily.

Choices: peace / piece

45. A ____________ of broken glass cut her foot.

46. A policeman is supposed to keep the ___________.

Choices: personal / personnel

47. Mail marked "confidential" is considered _________________.

48. The government classifies its ____________ according to training.

I Choices: principle / principal

49. Some teachers send all their problems to the ____________.

50. His ___________ duty was to count cars in the parking lot.

Choices: quiet / quite

51. The stove was still _________ hot in the morning.

52. The classroom was __________ during the exam.

Choices: than / then

53. A stationwagon costs more _________ a hatchback.

54. _________ the fun began!

J Choices: their / they're / there

55. They couldn't find ____________ car.

56. Tell me when ____________ ready to leave.

57. ______________ were no volunteers.

Choices: to / too / two

58. He gave the package ________ the secretary.

59. The package was ________ heavy for her.

60. She cut it into ________ pieces.

K Choices: threw / through

61. He drove ________ the night without stopping.

62. The quarterback ________ three touchdown passes.

Choices: whether / weather

63. I don't know ________ to go or not.

64. I don't know what the ________ will be like.

Choices: were / where

65. They ________ here an hour ago.

66. I don't know ________ they are now.

L Choices: who's / whose

67. ________ book is this?

68. ________ reading this book?

Choices: woman / women

69. Three ________ got off the elevator.

70. A ________ was the first person ever to win two Nobel Prizes.

Choices: you're / your

71. When ________ ready, we can go.

72. When ________ bill comes, pay it immediately.

MODULE A

Name ______________________

Objective A:

You should show you know the meanings and uses of OF / HAVE, COURSE / COARSE, and AFFECT / EFFECT, by using them correctly in various sentences.

1. OF / HAVE

1.1 Rule: Have is often abbreviated 've when it comes after some words. When it does, it sounds like of.

Example: should have = should've
must have = must've
could have = could've
would have = would've

Of is used whenever the abbreviation 've is not meant.

Example: One of the students left early.
It's the middle of the month.

1.2 Write 2 sentences using the abbreviation for have, 've:

1. ______________________

2. ______________________

2. COURSE / COARSE

2.1 COARSE rule: Coarse means "rough" or "crude."

Example: The flour was coarse ground.
Don't use coarse language around children.

2.2 COURSE rule: Course is used in all other cases.

Example: The ship was blown off course by the storm.
Of course the English course is interesting!

2.3 Write 2 sentences using coarse:

1. ______________________

2. ______________________

(over)

Write 2 sentences using course:

1. ______________________________

2. ______________________________

3. AFFECT / EFFECT

3.1 AFFECT rule: Affect is a verb. Use affect if "to" can come before it, or if "-ed" can be added to it.

Example: His speech affected everyone.
Inflation tends to affect everyone eventually.

3.2 EFFECT rule: Effect is a noun. Use effect if "a," "an," or "the" can come before it.

Example: The effect of the speech was enormous.
Eventually the negative effects of inflation began to affect everyone.

3.3 Write 2 sentences using affect:

1. ______________________________

2. ______________________________

Write 2 sentences using effect:

1. ______________________________

2. ______________________________

ASK YOUR INSTRUCTOR TO CHECK YOUR SENTENCES. GET HELP IF YOU HAVE ANY QUESTIONS.

Word Choice

Posttest

Name ______________________

Date ______________________

Directions: Please use each of the following words correctly in 2 sentences each.

1. __________ A. ______________________________
B. ______________________________

2. __________ A. ______________________________
B. ______________________________

3. __________ A. ______________________________
B. ______________________________

4. __________ A. ______________________________
B. ______________________________

5. __________ A. ______________________________
B. ______________________________

6. __________ A. ______________________________
B. ______________________________

7. __________ A. ______________________________
B. ______________________________

8. __________ A. ______________________________
B. ______________________________

9. __________ A. ______________________________
B. ______________________________

10. __________ A. ______________________________
B. ______________________________

11. __________ A. ______________________________
B. ______________________________

12. ________ A. ______________________________

B. ______________________________

13. ________ A. ______________________________

B. ______________________________

14. ________ A. ______________________________

B. ______________________________

15. ________ A. ______________________________

B. ______________________________

16. ________ A. ______________________________

B. ______________________________

17. ________ A. ______________________________

B. ______________________________

18. ________ A. ______________________________

B. ______________________________

19. ________ A. ______________________________

B. ______________________________

20. ________ A. ______________________________

B. ______________________________

21. ________ A. ______________________________

B. ______________________________

22. ________ A. ______________________________

B. ______________________________

23. ________ A. ______________________________

B. ______________________________

24. ________ A. ______________________________

B. ______________________________

QUESTIONNAIRE

Directions: Please give one response to each of the following statements, by circling one reply in the column to the left.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
SA	A	N	D	SD	1. I enjoyed using PLATO.
SA	A	N	D	SD	2 PLATO made it easier for me to learn this information.
SA	A	N	D	SD	3. I feel I learned this information better with PLATO.
SA	A	N	D	SD	4. Learning to use PLATO was easy.
SA	A	N	D	SD	5. I would like to use PLATO again.
SA	A	N	D	SD	6. Using PLATO helped me know whether I had learned the information.
SA	A	N	D	SD	7. I would have learned the information just as well without using PLATO.
SA	A	N	D	SD	8. I learn better from a teacher than from a computer.
SA	A	N	D	SD	9. I found this information easy to learn.
SA	A	N	D	SD	10. I enjoyed studying this information.
SA	A	N	D	SD	11. I knew how well I was doing when I was using PLATO.
SA	A	N	D	SD	12. When I had trouble or when I had a question, I was able to get help, or find the answer myself.
SA	A	N	D	SD	13. I learn well when I study on my own.
SA	A	N	D	SD	14. After studying this information, I felt I would do well on the posttest.
SA	A	N	D	SD	15. I prefer to study in a group with other students and a teacher.

APPENDIX K

Curriculum Needs, Functional Homeroom

APPENDIX K

Curriculum Needs, Functional Homeroom (ABE English 4-5)

March 15, 1983

In our discussion of March 3, the following conclusions were reached:

1) The methods currently used in your functional classroom seem very appropriate to the students' needs, and the course goals;

2) There is a need to describe the methods used in a way which will make them comprehensible and accessible to a wider group of other instructors. This description should probably consist of some history, a rationale, and theory, as well as day-to-day procedures.

3) The content and instructional materials used in the class should be systematized by a) stating the goals of the course; b) stating the objectives for the major units of instruction; c) developing/collecting evaluation methods, and d) cataloguing and annotating the materials and other resources.

APPENDIX L

Curriculum Needs, English 6 - 7

"Main Idea," Materials and Objectives

Curriculum Needs, English 6 - 7

March 15, 1983

In our discussion of March 3 the following immediate needs were identified for the English 6 - 7 course:

1. Description of the general goals of the course;
2. Consolidation of the numerous instructional materials currently available;
3) Written objectives for the materials selected;
4) Annotation of the materials, comments regarding their suitability for different students.

MAIN IDEA

SE = "Skill Extender"
SDI = "Skill Development Items"
PM = "Paragraph Meaning"
GMI = "Getting the Main Idea"

Related Materials:		
	1A:	"Skill Extender"
SE 1-1, 1-2	1A:1	The student should be able to detect the main attitude or outlook of a passage by identifying words or phrases which show the writer's point of view or biases on the topic.
SE 1-3, 1-4 SDI pp. 1-10 PM p. 84 (Ex. 3) PM p. 89 (Ex. 7) PM p. 90 (Ex. 8)	1A:2	The student should be able to find and restate the main idea of a passage by identifying the sentence which contains the main idea, and the sentences which state supporting ideas or details.
SE 1-5, 1-6 PM p. 86 (Ex. 4)	1A:3	The student should be able to detect unstated ideas in passages by inferring meaning from word usage, sentence structure, and other clues.
SE 1-7, 1-8	1A:4	The student should be able to demonstrate understanding of legal and technical writing as they might be found in various agreements, contracts, manuals, and other sources.
SE 1-9, 1-10 PM p. 91 (Ex. 9B) PM p. 92 (Ex. 10B)	1A:5	The student should be able to identify the main idea or most important information in passages of various lengths, using knowledge of point of view, sentences stating main and supporting details and ideas, by making inferences and by analyzing technical language.
	1B:	"Skill Development Items, Literal Comprehension: MAIN IDEA"
SDI pp. 11-14	1B:6	The student should be able to write the main idea of several related paragraphs, in his own words.
	1C:	"Paragraph Meaning"
PM p. 83 (Ex. 1A)	1C:7	The student should be able to distinguish a topic from the components of the topic.
PM p. 83 (Ex. 1B) PM p. 83 (Ex 2B)	1C:8	The student should be able to recognize non-components of a topic in a list of components and non-components.
PM p. 83 (Ex. 2A,B)	1C:9	The student should be able to write a topic for a list of components.
PM p. 83 (Ex. 2A,B)	1C:10	The student should be able to add to a list of components.
PM p. 83 (Ex. 2A,B)	1C:11	The student should be able to recall from memory some of the details (components) presented in a list.
PM p. 87 (Ex. 5) PM p. 94 (Ex. 12A)	1C:12	The student should be able to state in his own words the topic of an extended paragraph.
PM p. 87 (Ex. 5)	1C:13	The student should be able to recognize the main understanding the author intends him to have about the topic.

PM p. 88 (Ex. 6)	1C:14	The student should be able to determine the topic and the main understanding intended by the author, and combine these to recognize the central idea of a paragraph.
PM p. 89 (Ex. 7) PM p. 91 (Ex. 9A) PM p. 92 (Ex. 10A)	1C:15	The student should be able to select a sentence which contains the central idea of a paragraph.
PM p. 90 (Ex. 8)	1C:16	The student should be able to select the supporting details for a topic sentence or central idea of a paragraph.
PM p. 93 (Ex. 11A) PM p. 94 (Ex. 12A)	1C:17	The student should be able to state in his own words the main understanding about a topic which the author intends to convey.
PM p. 93 (Ex. 11B)	1C:18	The student should be able to state in his own words the central idea of a multi-paragraph essay.
PM p. 94 (Ex. 12B)	1C:19	The student should be able to write a sentence or phrase containing the topic/subject of a multi-paragraph essay.
	1D: "Getting the Main Idea"	
GMI pp. 1-6	1D:20	The student should be able to select a phrase or statement which reflects the main idea of a short paragraph

Main Idea Test: SDI pp. 15-17, 18-20.

APPENDIX M

Reading 10, Needs Statement

"Words in Context," Objectives

"Sentence Meaning," Objectives

"Context," Pretest

READING 10

Needs Statement

The following needs were identified by P. Erickson, in her note of March 3, 1983, to P. Fahy:

1. Getting meaning from context
2. Sentence reading for meaning
    2.1 Core parts of sentences
    2.2 Pronoun referents
    2.3 punctuation's effects on meaning
3. Making inferences
4. Recalling facts from paragraphs and selections
5. Following directions
6. Using reference materials
    6.1 Table of contents
    6.2 Index
    6.3 Dictionaries
    6.4 Encyclopedia
    6.5 Etc.

In discussions which followed this note (March 3, 7, and 15), various instructional materials and methods which had proved useful were discussed, and the topic "Getting Meaning from Context" gradually emerged as one which was both crucial for students and manageable for pilot project purposes. On March 15 it was agreed that the objectives identified for this topic would provide the focus for a pretest, which P. Fahy would develop. The pretest would be used as part of the orientation testing during the week of April 5.

The goal was thus to identify the objectives contained in the "Context" topic of the Reading 10 course, to identify instructional materials used in relation to these objectives, to develop test items in the form of a pretest on these objectives, to use the test with a Reading 10 class, and, at the conclusion, to collaboratively evaluate the total process and the resulting products.

WORDS IN CONTEXT

Objectives

Sources

Tactics I = Tact1
Tactics II = Tact2
Advanced Skills in Reading 3 = ASR
Reading Skills for Young Adults = RSYA

Words in Context

Obj. #

1 The student should be able to choose the meaning for an unfamiliar word when it is place in a sentence which provides context clues.

Sources

Tact1, p. 16, Ex. 4A,B

Tact2, p. 15-16, Ex. 2
Tact2, p. 4-5, Ex. 1
Tact2, p. 8-9, Ex. 4
Tact2, p. 9, Ex. 5
Tact2, p. 10, Ex. 6A,B

ASR, p. 84-5, Ex. 1
ASR, p. 87-8, Ex. 3
ASR, p. 88-9, Ex. 4
ASR, p. 90, Ex. 5
ASR, p. 90-1, Ex. 6
ASR, p. 91-2, Ex. 7
ASR, p. 95-7, Ex. 9

2 The student should be able to identify the types of context clues which could be used to determine the meaning of an unfamiliar word in a sentence. (Types of clues include direct explanation; indirect explanation by means of comparison, contrast/opposite meaning, and examples; clues outside the sentence; and clues from the students' own knowledge and experience.

Sources

ASR, p. 83-4, Ex. 1 ("direct explanation")
ASR p. 85-6, Ex. 2 ("indirect explanation")
ASR, p. 87-8, Ex. 3 ("clues outside the sentence")
ASR, p. 88-9, Ex. 4 ("clues from the students' knowledge or experience")

3 The student should be able to state in his own words a synonym for a word used in the context of a sentence.

Sources

Tact2, p. 8, Ex. 3
Tact3, p. 11, Ex. 7

Words in Context (continued)

ASR, p. 86-7, Ex. 2
ASR, p. 94 Ex. 8
ASR, p. 98, Ex. 10

Obj. #

4 The student should be able to identify special, unfamiliar, or unusual meanings for familiar words, by using clues to idiomatic, figurative, or technical/jargon language.

Sources

ASR, p. 93-4, Ex. 8 (figurative language)
ASR, p. 95-7, Ex. 9 (Idiomatic expressions)
ASR, p. 97-8, Ex. 10 (Technical/jargon language)

SENTENCE MEANING

Objectives

Sources

Reading for Meaning -- A. Sentences = RM-A (Tact1, pp. 67-74)
(Tact2, pp. 41-50)

Reading Skills for Young Adults = RSYA

Sentence Meaning

Obj. #

1 The student should be able to identify the action, actor, and object of the action in sentences of varying complexity.

Sources

RM-A, p. 1-2; 13; 17

2 The student should be able to identify the referents of pronouns in sentences and paragraphs.

Sources

RM-A, p. 8; 11; 17

RSYA, p. 104-106

3 The student should be able to use punctuation, by providing it or reading it accurately, to avoid confusion and solve ambiguity in sentences of varying complexity.

Sources

RM-A, p. 9; 14. Ex. 9; 17

RSYA, p. 94; 107, Ex. 8; 95

4 The student should be able to recognize "interrupters" (parenthetic expressions) in sentences by identifying them using punctuation and context clues.

Sources

RM-A, p. 10, Ex. 2

RSYA, p. 95-6

5 The student should be able to supply omitted words or expressions in sentences using context clues.

Sources

RM-A, p. 12-13, Ex. 5

RSYA, p. 96-7, Ex. 3

6 The student should be able to identify core parts of sentences when they occur in inverted order.

Sources

RM-A p. 14, Ex. 8-9; p. 17

RSYA. p. 95

Sentence Meaning (Continued)

Obj. #

7 The student should be able to identify core parts of "snowballing" sentences (compound, compound-complex sentences containing unfamiliar vocabulary and syntax).

Sources

RM-A, p. 15-16; 18

RSYA, p. 99-102

8 The student should be able to produce or identify a restatement of the main idea of a sentence or a paragraph using the various context and sentence meaning cues.

Sources

RM-A, p. 19-20; 21-27

RSYA, p. 102-104, Ex. 6

Context

Pretest

Name ____________________

Date ____________________

Directions: This Pretest is intended to show you and your instructor whether you already know this topic or not. YOU CANNOT FAIL THIS TEST! If you do well on it you will go on to something else. If you have trouble, your instructor will use the results to give you study materials.

Do the best you can. You will be told the results of the test in a few days.

Good luck!

* * * * * * * * * * * * * * * * *

Part 1: Read the following sentences, then do section B.

Section A:

1. The chauvinistic group held stubbornly to its own point of view.
2. The family led a peripatetic existence, always on the move from one place to another.
3. He pleaded nolo contendere and simply declined to enter a plea to the charges.
4. She was such a conscientious student that she invariably took copious notes.
5. Because of their size, whales consume prodigious quantities of food each day.
6. The actor received kudos from the critics for his excellent performance.

Section B: Which underlined words in the above sentences mean the following:

1. always: ________________
2. closed minded: ________________
3. praise: ________________
4. wandering: ________________
5. many: ________________

Part 2: In the following sentences, the context clues of

A) COMPARISON
B) OPPOSITE or CONTRASTING MEANING, and
C) EXAMPLE

are used. For each sentence, first give the meaning for the underlined word, then write A, B, or C to indicate which context clues helped you with the meaning.

______ 1. The music was as soporific to the parents as a lullaby would have been to a baby.

soporific means: a) emotional b) sleep producing c) boring

Type of clue: ______ (Write A, B, or C)

______ 2. They gave their own team an encomium, but they mocked the opposition.

encomium means: a) a tribute b) an excuse c) scorn

Type of clue: ______

______ 3. A coterie of visitors, like a herd of grazing cattle, moved through the museum with their shepherd, the curator.

coterie means: a) a group b) a mob c) a destructive force

Type of clue: ______

______ 4. He concatenated his words in the poem as if they were pearls in a priceless necklace.

concatenated means: a) crushed b) strung together c) tangled

Type of clue: ______

______ 5. He was as diffident with his boss as a tongue-tied school boy might be with a stern teacher.

diffident means: a) bold b) eloquent c) shy

Type of clue: ______

______ 6. His first answer was desultory but his second was very well organized and presented.

desultory means: a) rambling b) short c) incorrect

Type of clue: ______

Part 3: Read the following passage.

North of Cambridge lie the Fens. The sea from which they arose laps at their northern boundaries and north and east great rivers lazily wind across them, drawing black cattle to drink among the sedges at their brink. This land would be one of silence, were it not for the innumerable company of larks, of bittern, coot and moorhen, of sedge warblers and reed sparrows, which ever provides it with a faint and not discordant music.

What is the meaning of the following words?

1. fens:
2. sedges:
3. innumerable:
4. discordant:

Part 4: What is the meaning of the underlined word as it is used in the following sentences?

1. Capital punishment is an explosive issue with some people.

   In this sentence explosive means:

2. It was a heavy speech

   In this sentence heavy means:

3. She wasn't dense, she just didn't hear the question.

   In this sentence dense means:

4. The judge imposed a gag order on the press during the trial.

   In this sentence gag order means:

5. The vote was a landslide.

   In this sentence landslide means:

Part 4: Read the following passage.

When filling a TIPS file, the RESET key should never be used. Each line should be proofread before a carriage return is pressed. If an error exists in the line, use the ← key or control-H to backspace to the error and re-type the rest of the line.

You may wish to change or add questions, to change groupings, to improve messages, etc., on a completed TIPS file. These changes are possible using the TIPEDT program.

Answer the following questions:

_______ 1. The above information is probably about: a) using a computer program; b) repairing a typewriter; c) writing a report

_______ 2. The " ← key" is probably: a) a key to find directions; b) a special key on the typewriter; c) part of a program

_______ 3. A "TIPS file" seems to be: a) a file for TIPS; b) a method for labeling things; c) a file containing messages, questions, etc.

_______ 4. The "TIPEDT program": a) permits changes to a TIPS file; b) contains several TIPS files; c) is not described

APPENDIX N

PLATO Instructions

PLATO Instructions

1. Sign-on

   1.1 PLATO name: ______________________

   1.2 PLATO group: ________

   1.3 Password: (You make one up)

2. Sign-off

   2.1 Press SHIFT-STOP to sign-off.

   2.2 Be sure to sign off after each session on PLATO.

3. Schedule

   3.1 The schedule for PLATO will be posted on the wall near the terminal.

   3.2 You may reserve one time period on PLATO per day.

   3.3 If no one has reserved a time period, anyone may use it. (First come, first served).

   3.4 Reservations are good for 3 minutes after start time. After 3 minutes, anyone may use the terminal.

4. Using PLATO -- Advice and Information

   4.1 You need 5 correct answers to pass an objective, and 2 incorrect answers to fail one.

   4.2 Bring scratch paper with you. (Don't use a calculator unless your instructor approves).

   4.3 Don't touch the screen with anything except your finger.

   4.4 If all else fails, READ THE DIRECTIONS. (Or ask your instructor for help.)

APPENDIX O

PLATO Record Usage Sheet

Instructor: ______________________

Record usage for group

Date: ________________

		Last On	Days	Hours	Sess.	Mods. Compl Remain.

APPENDIX P

Student Survey

STUDENT SURVEY

Name ______________________________

Date ______________________________

Circle:

SA - if you STRONGLY AGREE with the statement
A - if you AGREE with the statement
N - if you are NEUTRAL about the statement
D - if you DISAGREE with the statement
SD - if you STRONGLY DISAGREE with the statement

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
SA	A	N	D	SD	1. I usually do well in math.
SA	A	N	D	SD	2. Math is easy for me.
SA	A	N	D	SD	3. Math is useful.
SA	A	N	D	SD	4. I usually learn new things as fast as most people.
SA	A	N	D	SD	5. In class, I can usually get help whenever I need it.
SA	A	N	D	SD	6. I don't like other people seeing my mistakes.
SA	A	N	D	SD	7. I can learn faster on my own than in a group.
SA	A	N	D	SD	8. I learn math more easily than I learn other subjects.
SA	A	N	D	SD	9. I usually know whether or not I am doing well in a course.
SA	A	N	D	SD	10. I usually do well on tests.
SA	A	N	D	SD	11. I am usually nervous when I take tests.
SA	A	N	D	SD	12. I like learning in a group more than learning on my own.
SA	A	N	D	SD	13. I believe that tests are a fair way of telling how much I know about a subject.
SA	A	N	D	SD	14. I usually do better on assignments than on tests.
SA	A	N	D	SD	15. I like a lot of tests in my courses.
SA	A	N	D	SD	16. Tests help me know how well I am doing in a course.

APPENDIX Q

Trnascript, Questionnaire Analysis Panel

The following is the transcript of the interview sessions with the Questionnaire Analysis Panel. The panel consisted of a High School Math (HSM) instructor, a High School English (HSE) instructor, and Basic Education Math (BEM) instructor, and a Basic Education English (BEE) instructor. The two sessions were conducted on January 13, and January 20, 1983.

(The Basic Education Math instructor was not present at the start of this session.)

Item 1: What are the pros and cons of individualization?

Item 4: Is student isolation inevitable in an individualized program?

Item 7: How can individualization be tested?

My first question has to do with item number one, which says, "Individualized instruction should be an option for all students in the program." There seemed to be a difference of opinion. High School was less positive than Basic Education. and RNA /Registered Nursing Assistant/ was undecided, but Basic Education appears to be quite positive in agreeing with the statement. What would be the question there? What would the High School instructors be saying on this item?

HSE Well, I think probably because our courses are accredited we have certain material that is required for all students, and all students must cover the same material if you're going to give them credit. And there's a certain scope and sequence that has to be followed. I do believe. thinking about individualized instruction (and I'm not quite sure of the definition of it), I do believe we're doing considerable in this area, and I don't believe people realize that they are.

Q That they themselves are?

HSE That they *are* doing it. When I look at the Reading 10 course, and English 10A, they work ahead at their own individual pace, the answer keys are provided, they come to the teacher for individual help when they need it, they write their quizzes at specified times, possibly, but that's flexible. And we have a whole programmed text on grammar units and study, so that's individual. They go to the library and do Listen and Read tapes, so that's individual. That's on their own time and they can do it as many times as they wish. So I think there's maybe more going on than what we realize. When you say individualized I think maybe they're saying, Well we have the individualized package that's 10A, say, which is not true. We don't have that.

Q It's not totally individualized.

HSE Not totally. But there are units within it that are individualized. And some students do work far ahead in, say, the writing sentences area. And that's fine.

Q Is that happening in math, too?

HSM I think this was the basic point that got bandied about in the staffroom in filling out the Questionnaire, when this thing came out. The idea of individualization was one of the key things, if I can recall correctly, and try to reflect the group feeling. First of all, what exactly does individualized instruction mean? Although I think people more or less have a common idea that it's a situation where a student could feasibly cover the complete content on a one-to-one basis. Or three-on-one, the teacher, the student, and the materials. I think the main concern was, although it's probably an option for some of your better students, it would be an unbelievable amount of work for us to set up our complete system of 10, 20, 30, 13, 23, 33 courses on this format. And I think that was paramount in the minds of a couple people I talked to. They thought, Look, let's say no. (Laughs). Almost. Even if it would be handy for a few students, or even if we wanted to try it out on a project basis, it would be one heck of a lot of work to set that up, on the front end.

HSE And I don't know if financially it's needed. If they really want individual work and be able to work at their own pace, they should go to the Correspondence School.

HSM That was another point I heard.

HSE Those are set up as individualized. And since we have to meet the requirements of the Department of Education, and since we're talking about these Composite Exams, in light of that, if that's what the need is . . . . Remember that case conference we had with that girl? She asked if I would give her the materials for the English, because I would not allow her in my class anymore because of disruptive behaviour, and she said if I would give her the materials she would work on them on her own. And I said, No, but you are free to take it through Correspondence. And she said, Oh, I've tried that. I can't do that.

Q Of course, that's the problem. You don't have a teacher or other students in Correspondence. Whereas in individualized learning you could. Maybe that's a question. Number four has to do with that, and so does number seven. The way that staff normally conceive of individualized instruction, is it the student working alone, like programmed instruction?

HSM I think that's the general feeling.

Q Okay, so it's not that the student is pacing himself and selecting from among options like going to a lecture, going to a group discussion. working in the library, working in a resource centre, working with a computer. It's that there's one style of learning, and it's alone and isolated.

HSM I think that's the general feeling, don't you, ____________, in the High School?

HSE I think so. I don't think they see it as a battery of materials that's available and a contract set up between the teacher and the student.

. . .

BEE I tried it in a couple of places and, to go back to a point made earlier, it seems to me it can be very successful but it takes a lot more planning, and a lot more work, a lot better ratio. There's a lot of things I like about it but it's a lot more expensive.

Q The prior preparation is enormous.

HSM Yes, it could be. Looking at this on an individual basis, to show my own bias on this, I would say that the two poles on this would be the lecture approach on one hand, and the Correspondence courses on the other. if we could agree on that. Somewhere in the middle there's an approach where there's some teacher lecture, and some modular approach to the program, with pre-packaged materials, and a nicely organized curriculum. This is what I prefer. I did a little bit of research on this and the results were just outstanding.

. . .

BEE We should be getting more money, I guess. I think everybody, or most teachers, have an idea how to use it in their classrooms, even if it's only parttime. But with ratios that we have, and the lack of time to start anything new, we don't get around to it. There's lots of things involved, depending on the type of program you're setting up. There may be a lot more marking, so it would be nice to have someone who could help with the marking. And the physical setup. There's so much involved.

. . .

HSM In evaluating the benefits of the individual approach, and I thought this at the time and still do (it was proven statistically. if you go along with that sort of thing), that the main benefit for the students in the individualized approach that I tried was they could succeed even though they didn't attend regularly. Now that may seem a strange thing to say but if you have spotty attendance patterns -- the kids are sick, or whatever -- rather than continually trying to develop methods to have one hundred percent attendance at every class, maybe the idea is to have a curriculum that can work with the fact that attendance is rather spotty. And I found with the individualized approach, with the materials and whatever, that they could work at home. They could succeed in the course even though their attendance wasn't real great. And I think that's a real plus.

HSE Uh-huh. We find that in English . . . .

HSM I don't know if that would work in the social sciences.

HSE Well it does in the English. Because when my students are away and they phone in I say, Well, we're doing this. Go ahead and work on your units on writing sentences, and you can write the quizzes when you come in. Because there's a quiz for each unit, that I mark. I don't mark the programmed units, just the quizzes. So they can do those at any time -- they don't have to be done in the classroom. They may miss the group discussion that went on, if we all did a common quiz, but it can still be handled individually. They can also go ahead in the Phase books -- they're set up for individual work.

. . .

BEE If we could just go back to number four, the word "isolation." I was just going to add I have run into some students who have felt isolated from the teacher because of the individualized approach. They felt it was really difficult to track down the teacher, to get the time to ask questions and check things out. They felt that was a problem. Nothing mentioned about isolation from other students, but isolation from the teacher.

Q Is that inevitable, or is that something that just has to be watched out for?

BEE Oh, I think it has to be watched out for. But that's where your ratio comes into it. Your ratio has to be much lower.

. . .

HSM I would say, then, that isolation in the type of individualization I visualize would be less than what I'm doing now. I'm thinking of my Math 30 course. I basically lecture, and it's one-on-one. . . .

BEE Yes, I agree.

HSM . . . and it's back and forth this way, and they do their homework. Whereas if I use the same procedure as before, there was a lot of interplay. It was a student-centred sort of a thing rather than a teacher-centred. So again it depends on the definition of that term individualized.

Q There is a form of individualized instruction that features a lot of contact, the way you arranged yours?

HSM And that's what we would want.

. . .

HSM So whether or not we could go, going back to your question could we make it system-wide, within our school. Maybe that's not desirable anyway.

BEE No.

HSE Huh-uh.

HSM I mean, my little project worked for my Math 13. Now, maybe it won't work in other courses.

Q Building on that, would you suggest it be tried on a course or class basis? Rather than a bigger or smaller basis?

HSM I would think so.

HSE I think it would work in measurable skill areas like yours much better than, say . . . .

HSM In the English.

HSE . . . English or Social, where we're dealing more with concepts and ideas . . . .

HSM Hold it now! Are you telling me we're not dealing with concepts? That's in fact what we're trying to do. (Laughs).

HSE Yes, I know, I know! I hit a nerve! (Laughs).

HSM No, I agree with you.

Item 10: Why are present courses not suited to parttime learners?

What is the attitude toward parttime learners?

HSM At the High School level, courses are separated into 10, 20, 30, 13, 23, 33, and the different subject areas, so it would be relatively easy for a student to come in and just pick up one or two.

Q Just take one course.

HSM Yes. And we have had students in the past who were all finished except for a single course, so it just seemed logical at the High School level. Now maybe that's different at the Basic level. Maybe you take a full day's courses or you take none, I don't know.

BEE We have tried some parttimers, and I thought it worked quite well, when we had the Homerooms. Now that our Homerooms are dead people are feeling that it's more difficult. It would be harder to fit people in.

Q What was it about the Homerooms that allowed that to work?

BEE I think mostly scheduling. They were able to come in for part of the morning or part of the afternoon. When we had the 5 - 7 Homeroom there were times when we changed things around to suit the parttimers. I'm surprised that it's negative. Against parttime.

Q So at least some staff, yourself included, would have been more positive?

BEE I think part of the problem was they came various days, that there wasn't anything regular set up. If we were talking about someone taking, say, a Math 10A I assume they would be expected to be there every day at that time. When happened in Basic Education was often it was a Tuesday-Thursday, or a Monday-Wednesday-Friday student. That created problems because it was hard to work from day to day.

HSE Well, I don't think a Monday-Wednesday-Friday student could be accommodated in High School, either.

Q You would have to have a daily attender.

BEE Or part of each day.

HSE A daily attender, or part. I have had parttime students in English and I have found them highly motivated.

Q They would be taking just English but they would be there every day?

HSE That's right. And maybe they would have an eight-thirty class, and would be late because they would be working until twelve, but they chose to have an early class so they could get their homework assignment and get to work. And I found them quite motivated. It's like when you're working and taking University courses.

HSM You make good use of all the minutes in your day.

HSE And they don't tend to sit around the cafeteria and get involved in too much visiting.

Q Would it be a good thing to have parttimers, from that point of view, that they would exhibit certain good habits?

HSE I would think so. I can't see anything negative . . . .

HSM I've never heard anything negative or anything against the idea of a parttime student at the High School level. We get a fair number of students that are concerned that they can't spend enough time on a course, and when you get right down to it with them they have a job four hours on Monday and five on Tuesday. They're just doing too much. And it's often that concerned student that wants to consider parttime.

Item 9 and 45: Would any kind of outside curriculum development assistance be appreciated?

Is there any kind of assistance or outside assistance, and we're dabbling with consultants, we've had outside studies done here. What do we need in that way? Are they saying, Nothing? Or are they saying, Something different from what we've had?

HSE I wonder if they're considering that printed material is an outside source?

HSM Printed . . . ?

HSE Is printed matter? I mean, everytime we go to plan anything we get out material referring to other people's methods, and so on.

Q So outside expertise could refer to printed sources?

HSE Certainly. Textbooks, teaching methods and instruction -- many of these came from printed sources. And then you can analyze and take what you want and leave what you don't want.

BEE You must be the only one who agreed with it. I think maybe this question just came at a bad time, when people were fed up with outside expertise.

HSE But I don't think they were thinking of printed matter as outside expertise.

Q They may not have. They may only be thinking of . . . .

HSE They may only be thinking of people like ______________. Or someone else coming in. Because we don't often do something without reading. Just off the top of our head.

HSM That's true. How I would read that, though, nine and forty-five superimposed, is that staff would seem to be saying that, yes, maybe we should be focussing more on curriculum, whether that's through an individual who's named as a curriculum expert, or whatever. But we should be focussing on curriculum, but maybe we don't necessarily have to go to the outside to do it. It's maybe not a high enough priority here, but maybe you don't have to bring in anyone external to do it. We can do our own housecleaning. I think that's part of it.

HSE My feeling about forty-five is that it definitely has to be supervised. But definitely not dictated. We have to have staff input. Right now in High School English we've established curriculum development groups at all levels, and are looking at the curriculum now, looking at how much time we're spending, looking at possibly making units of instruction, or modules.

Q Is one person in charge of that?

HSE /The Senior Instructor/ is in charge, as Senior Instructor. And this is great. Each area then has its own head. I'm heading the 10B and somebody else the 10A.

Q No one objects to that kind of supervision?

HSE Oh, no. In fact they're finding it very exciting. They're also looking at the scope and sequence of skills. and also trying to meet the Alberta curriculum guide. Because we're feeling that these comprehensives are bound to come in.

HSM That's a key thing at the High School level.

HSE Yes. Very much so.

HSM If we get back to the Departmentals we're going to have to look at curriculum, and pretty quickly. If we want them to perform on that battery.

Q Is there a staff feeling about curriculum specialists or curriculum training?

HSE I think it's negative.

BEE Right now I would say it is.

HSE I think they feel the expertise is here, within the building. We have people who have taught adult education for so many years, in so many areas, that the experience is here. There might be some guidance needed, but possibly even that's here.

BEE Guidance, or even evaluation. That's what we were hoping for in the English 7 - 9. We had outlined what we were doing in out program and with ____________ that's what we were hoping. Some sort of an evaluation, help in how to formally set it up and also evaluation of how we had done. But the basic work we wanted to do ourselves. We didn't want someone else determining what we were going to teach.

. . .

BEE Again that goes back to this idea of outside help and outside experts. It seems to me there must be a more efficient way to plan these things, and I suppose that was what we were hoping with ___________, that we'd have guidelines. That there'd be a way to pull all of this together in a shorter time.

Q High School English appears to have a positive, optimistic environment. Is it getting to be negative or pessimistic, or what's developing?

BEE We're right in the middle now. I think people are maybe losing enthusiasm, it's going on so long.

Q They have yet to see . . . .

BEE The results. yeah. And so we plan what we're going to do, and all this, and it's all in the works, and now another semester's about to begin and we're still left high and dry. Do we do what we used to do, do we use all these new ideas. We've still got all the old materials. It goes on. And you get this really lost feeling.

. . .

Item 12: What instructional methods should be used in teaching adults at various levels?

HSE That ratio thing again. This time I say I can see every student in every individual block every day. If I choose to. That's because of numbers. I have fourteen this time. And I can see each person's work that I assigned the night before. If there's a notetaking assignment I can go around an analyze theirs very quickly. And have a talk, or ask them to stay. That student-teacher contact is very important. They're free to go to the library at that time, they're free to go and do many things. But often you'll hear students say, I'm afraid if I do I'll miss something. And it's not something I'll be teaching them, but it's something they'll hear me saying to somebody else, and I may go to the board, or I may do something else. It's that teacher-student contact. They don't want to leave that room.

. . .

HSM I think there's another factor involved that we're all aware of and that's that as teachers we like to have our own individual approaches, and I think we have a right to that. Even in this Questionnaire, I have a sneaking suspicion, and even when I did it myself I was kind of looking behind those sentences. You know, really, what does that mean? And what will it lead to? People were saying, Hey, someone's doing some research. Is this going to lead to a blanket individualized approach in the school? If it is, I'm going to say no as much as I can.

. . .

Q Item twelve, in that same section, is just incomprehensible to me, and I'd like any insights you can give. It reads, "Methods suited to the unique needs of students in the program should be used, even if these methods are not available to the students later." Basic Education agreed, so did RNA, but High School didn't, and the statistic is significant between the two. I just don't know what reading was given.

HSE I think they're reading into it that methods other than lecture, discussion group, the type of thing we're using now. and what they would be I'm not sure, but they're saying we have to prepare them for NAIT and University. And they must become familiar with the modes of presentation they're going to meet at those levels. That's what our focus pretty much has to be. I asked that same question in a staff meeting today, and that was pretty much the answer I got. Well, you know, they're not going to be allowed to turn in assignments late or necessarily be allowed to work at their own speed. When they get to University they're going to have to learn to organize their time and their work completed and take a high degree of responsibility for it, and listen in lecture and ask intelligent questions. Not even necessarily intelligent questions, but questions so they can get an understanding and get that interplay between teacher and student.

BEE That's the way I read it, too, and it would be more important at the High School level, people would be more conscious of it. At the Basic Education level we make more allowances. At the High School level it's time for them to cope or change.

HSE Yes. Maybe it is sad but I'm afraid that when they do get over there, if it is University, the more we can prepare them to take lecture notes and to work independently, turn things in on time, the easier it's going to be. Don't you feel that's what your staff is saying?

HSM Yes. I didn't address this particular question in conjunction with other people. I would agree that what we want to do at all levels is teach people to become independent learners. Regardless of the methods that are used.

HSE Right, but we expect that at the High School level they do have the skill to do that. The social and emotional skill that's required. But at the Basic Education level you can't assume that, and you're going to try anything to reach them. But you have to, especially at the lower levels.

Q Let me put it this way: would there be any conflict if students in Basic Education were being prepared with methods suited to their basic level, coming into our High School? Would that be perceived as a problem?

HSE Yes, I believe so. If it was at the 7 - 9 level. Because the 7 - 9 is a feeder course to the High School. Those are the people you have there who you expect to go on to the High School, so I would expect you would find teachers saying that they should be prepared to accept the methods and follow the procedures that are set for this particular level. Not necessarily that I would, but I can hear them saying that.

BEE Unless there're options available. Too bad if there aren't.

HSM Yeah, I don't follow that point. This whole thing has gotten confused. What is it you're saying? If Basic Education used specific methods which are different from those in High School, would there be a problem?

Q Methods that are appropriate at those levels . . . .

HSM Regardless of what the methods are?

HSE I said no, they wouldn't feel that. But at the end of 7 - 9 possibly the methods should be closer to . . . .

HSM Kind of phasing in? We should be more or less the same?

HSE Not entirely, but so that they can work independently in group situations and all the other requirements that are there. And maybe not so much spoon-feeding. These are things that have come up.

BEE I'm not wild about that. To me that's the next level dictating our methods, and I think we all approach things differently and we all do things differently in the classroom.

HSE However you all have the same goal, survival of the student, in mind at the different levels. And I know that in teaching 10 I try to prepare the student for 20. That's part of my goal.

Q Is there a group of students in 10 for which 10 is terminal?

HSE Uh-huh.

Q And do they get a different preparation?

HSE Yes, to some degree.

Q We're back to that individualized thing again. If we had an individual outlook we would distinguish between students who had an ambitious goal requiring them to be versatile learners from those whose goals are self-contained in the Basic Education department, say. Or don't require that they ever learn to take lecture notes, or whatever. And they could therefore learn differently. Maybe spoon-feeding. I had an image when you said that, do you eat with your hands up there, or what? (Laughs). So there does seem to be a difference in perception there. The High School staff does seem to have a very clear focus on the next stage and the requirements of the next step. How would you say it is for Basic?

BEE I would say at the 7 - 9 level we have, too. But I can't agree that they have to be prepared for the methods.

HSE I don't think I'm necessarily saying methods, but one method is to listen to a lecture, to take notes, to do a few practice exercises, to go ahead then on your own and complete an assignment in a specified time frame. I don't think that's really asking more than you're doing. I'm not saying you have to get up and lecture three days out of five, or have group discussions, but I think that is the area most students ahve had difficulty.

Q An adjustment problem?

HSE An adjustment problem.

Q What would the answer be in the staffroom if we were to ask is there a perceived difference on the part of staff between the methods in Basic and the methods in High School? Do most staff feel there is a difference now? /To HSM/ You're kind of straddling both departments now.

HSM Yes, and I'm trying to get a handle on it now.

Q Did you have to change gears?

HSM No. To respond to the first point that was made, speaking for the Math/Science at the High School level. I think what we do is make every attempt to ensure that we cover the content at the particular level, because the content is sequential. But there is no obligation on any math or science instructor to use one method as opposed to another. We're given pretty well free hand. You cover that content, however you can do it. At the same time I'm thinking now we're just in the process of taking another look at curriculum. Curriculum is more than content. There is all the methods. and the other skills that are involved. So we're in a transition stage. But basically I would say method is not dictated. Make sure you've got your content covered so they can take the next step. On the other I'm really not sure. I really am straddling and I don't know whether I can go on one side or the other.

BEE Personally I'm aware of differences in methods used by individual staff members, not High School versus Basic Education.

HSE I would think probably that's the way I'd see it, too.

Q It's more of an individual thing than departmental?

BEE/HSE Uh-huh.

HSM There's a feeling in Basic Education these people are at the lower level and instructors to a great extent are guiding: come on, force them along, take them by the hand, move them along. And try to give them some skills they can work with. We like to think we're more removed from that and we can focus more on content. But I'm not sure that's a negative sort of thing.

Item 23: What prevents well-planned change, under normal conditions in the program?

Item 24: Why is change not planned effectively?

Q Since we're implicitly talking about curriculum and curriculum development, twenty-three says well planned change is possible under usual conditions. Basic Education didn't think so, High School thought so. Twenty-four, planning for change is usually done efficiently, and again Basic Education didn't think so, High School was right on the border. What do most instructors think about curriculum development, and planning and change? What don't we do right? What should we do differently?

BEE One of the problems is. I think, we make changes without planning well enough. Thinking it through and looking at the ramifications. And then a little while later we have to make changes in what we've just changed. And it goes on and on. There doesn't seem to be enough planning and evaluation. We just plunge in.

Q Pre-planning?

BEE Pre-planning. Pre-evaluation, maybe. I mean we're not looking at it carefully before we make the changes, and then more changes are needed, and it goes on and on.

Q And the effect of that is inefficiency? What annoys instructors about that?

BEE Inefficient use of our time, for sure. You're preparing for something new, and just about the time you know what's going on you're changing it again. It seems to go on and on.

HSM One comment I've heard several times over the years, and just again last week, is that curriculum is an ongoing sort of thing. You change it, and then you change the changes you made. And I think the consensus in the staff now is that this is not necessarily negative. That this is just the way it is, and it's healthy. The one other point that's been made quite a few times is that often expectations are laid down that you should get this curriculum laid down, let's get on with this and do the final job, once and for all. But this is often not supplemented with adequate time and money to do an adequate job. To do it once and for all and get it in a good form. And in conjunction with that. a third point that is often heard is that we don't really have curriculum development capability here. Graphics people curriculum typists, we don't have that facility to produce software we can be proud of, put it that way. It's kind of done when one of the secretaries has a few minutes. Can you type this up? It's kind of an ad hoc approach.

Q So while it's ongoing, we haven't equipped ourselves to do it on an ongoing basis?

BEE Or at least not to finish, to get it to a final phase.

HSM It's not a number one priority. You do it when you can fit it in.

HSE I'm wondering if the objective is always clearly defined? Or is the purpose of the change?

BEE Well recently we've been spending a lot of time on that, on the purpose and the basic organization of what we plan to do. And there's no time left for the actual materials that you plan to use to accomplish all these wonderful things you've planned, before changes are needed and you start meeting all over again. Meanwhile it seems that nothing changes in the classroom, or very little changes in the classroom.

Q Is that blamed on a lack of prior planning, or what is perceived to be the problem?

BEE That would be part of it. Maybe if we started with a clearer picture of what the final product should be there would be less time spent revising. It's also a lack of time and lack of people to do the software.

[The Basic Education Math instructor (BEM) arrived at this point.]

Q Does this add up to a feeling among staff, as you said, that curriculum is not a high priority, but it should be? Is there a tension there? Have we undervalued the importance of curriculum development?

HSM Maybe I haven't made myself clear on that. I think everyone I talked to said curriculum is a key aspect of our courses. Obviously, that's the course. But it's not backed up with a facility that allows us to do a quality job. I'm thinking there in terms of actually producing materials, and maybe in conjunction with that, adequate time off. I've heard that said more often. I don't think I've ever heard, Yeah, we'd get on with curriculum, but we don't have a good plan yet. We know in our own minds what we want to do. I'm not sure we need a lot of pre-planning.

BEM I think that's generally what I hear. As __________ says you can count the needs, and talk, but . . . .

HSE I think maybe in High School English it's the most exciting it's been since I started at AVC.

BEE I think that's true with us, too.

Q Why is that?

HSE Well, I think we've always said curriculum can't be stagnant but in some areas it tended to be that way. And we're busy trying to put together packaged material to go to outreaches. I spent the summer on the initial stages of that, doing the 10A and 10B and __________ did the 20. And now the materials are all together and the objectives are laid out for each area. And we're looking at how much time is being spent on this particular skill. We're comparing our objectives to the objectives of the Alberta curriculum guide, and looking at where our focus is, and allowing new staff to have input. There's some rousing discussions going on and it's just great. The feeling is, Oh, wow! We're really going to get some input into this!

Q Is that the feeling in Basic?

BEE Well, I've always thought all the staff should have input into this, and everybody share, and I was pleased when it started, but maybe our meetings aren't long enough, maybe we don't have enough time together. But it seems we're going around in circles a lot. We're rehashing the same old things, at times having trouble agreeing on things, everyone has . . . .

HSE Differences in philosophy?

Item 17: What is needed to increase awareness of the potential of technology to assist alternative delivery of instruction?

Item 28: What changes in inservice practices should be made?

Item 34: How can the instructor's role vis-a-vis new technologies be clarified?

Q On question seventeen, regarding whether most staff are adequately aware of the potential uses of technology for alternative delivery of instruction, Basic Education staff were pretty definite they weren't, High School staff thought they were, and RNA was undecided. In general, for those people who aren't aware, whether Basic Education or High School, what would they feel is needed?

HSE Well, I think right away we need to define what we mean by individualized instruction, because there are different degrees of it. And many people seem to think of it as self-teaching materials. Programmed.

BEE Technology, too. I wonder if everybody's thinking computers?

HSM That's what comes to mind.

BEM That's what comes to mind, I think. That's what I would read into it.

Q So there's that question of definition.

BEM I don't think we're at all adequately aware of potential uses. and I'm just limiting it to computers. I think that's the way everybody read it. We had originally said we would do some more inservices with the staff, but that has never occurred. I don't mean teaching them to program. I mean literacy.

HSM As an aid in the classroom itself.

HSE I did take that one that was offered, the trial run, that was offered to some. And it was very good, it was very well done. The only trouble was it was at the end of the day and everyone was tired. And I just haven't had time to go down and practice it and I'm afraid I've lost what I did learn. That's important, not only the idea of training sessions but some follow through.

Q Was there any value in what you did do, in any terms?

HSE Oh, yes. At the time I was quite eager to get going. I learned a lot and looked at some programs.

Q Would you recommend that for everyone, even if . . . ?

HSE Certainly not at the end of the day. I found I had a headache every night when I went home. Of course some nights it was three hours long. But every night was a headache. Three-thirty is not an appropriate time.

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Q There are a couple of other items on the list that might refer to that. Number twenty-eight refers to our inservice procedures. It says that when change is planned inservices are provided to help staff prepare for it. Basic Education and High School were undecided, they certainly weren't enthusiastic. Then, under the computers section, item thirty-three is very negative. The policy is not clear to anybody. Thirty-four, the role of the instructor is not well understood. So what would the picture be? When we talk about computers? It sounds like you're saying our method of inservice in this particular instance wasn't the best. It came late in the day and left you exhausted. There's that policy problem, item thirty-three, we don't know, or instructors don't feel they know, where we stand or what their role would be.

BEE And number twenty-eight, we haven't had enough inservice, or chance to learn about it and how we could use it.

Q What would be the optimal way of getting that inservice? If not late in the day, how could we get people more comfortable with the technology?

HSE I think the only way you're going to get comfortable with it is use it yourself.

BEE Uh-huh.

HSE There isn't any appliance I've ever gotten in my home that I've felt comfortable with when I first got it, and I'm sure it's the same with the computer. I don't feel comfortable with it because I don't know enough about it. I need to go through programs that students would go through, and see what it can do. And quite a few, not just one.

BEE Yes.

BEM For me the main thing is time. I mean I feel comfortable with the computer and yet it's the time to go down and preview what we do have, which is quite limited. So we don't have much to look at to see what is possible. And staff is hung up on a very negative attitude towards computers, I think. In Basic Education. Okay, I'll say all Upgrading, and go the whole way. They see it only as one thing. It's what you were talking about last time on the tape, the hang up in the terminology about what is individualized instruction. Is it a package thing you sit and work through? And I think we all agree we don't want that sort of thing. So that sort of mix up in the terminology of individualized instruction gets equated with computers.

Q Computers are a form of that?

BEM Computers are the same as a paper and pencil package thing you work through, the only difference is it checks the answers.

BEE And computers are for fun. Because I don't have much experience with them, computers are for play. And I just don't see how English can be taught using them. In working with ESL, and listening and speaking, and I keep getting back to that. Maybe the computer can do some things but it can't teach English. But to go back to one thing, at one time my Post-ESL students were using PLATO, and I would go in from time to time, but every time it was like starting all over again. I think if we're trying to do any kind of inservicing, or we're trying to work with the computer and get some knowledge, it has to be day to day. I would go in every tenth or fifteenth day and I would have to go through all the steps again. I couldn't remember how to get in. So you really have to play with it every day.

HSE Uh-huh.

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HSM As far as extra inservices are concerned, we've got that computer room downstairs, ______________ has done some initial work, we've got PLATO, we've got booklets all over the place, we've got self-paced modules that are programmed for people who are interested. I think it's there. I don't think a massive inservice is going to change attitudes.

BEM No, it's the attitude thing more than the inservice. Absolutely. And time. And, in a way, attitude. I think some of the staff are thinking that eventually this thing will just go away, and I don't have to spend any time on it. And I often hear the English teachers say, It's something you math teachers might want to use but it's not for English, as __________ is saying. And I couldn't agree with you more. If you use the word "teach" English, yes. However, on the other hand, I see it as one of the greatest tools possible for English, in the word processor. I don't think we should be trying to get the staff to write any programs. There may be something, spelling, grammar, et cetera, but word processing for the students to use to do their papers with.

. . .

BEM I think what really they do want is to be able to comfortably use turn-key systems that are available.

Q So turn on the machines and preview existing things, but not necessarily write anything.

BEM Or learn to use the word processor. I agree with __________, just inservices on computer literacy, no. Because if the interest isn't there and the time to use it you get so much, like __________ and __________ say, it's gone in no time. But if I can learn to use the few buttons I need to work my drier, and do it a few times, I've got it. The same with the staff. I showed a few of them how to use Visicalc. to put their marks in, that's all we've tried to do, and they do it. They're quite delighted. If we could just learn to use the word processor, myself included, I think that would go a long way toward them seeing it as a tool, and transfer it to students.

. . .

Q What about a University course, or something, in microcomputing?

BEM Okay, as long as we have control over it. My only concern there is that you have someone come in who decides he's going to teach programming. I don't want programming, I want a different sort of approach from that. After that, if you got from that a small number of people who want to do some programming, that's the next course offered. And, granted, it would be great to offer that sort of course here, too, for those who wanted it. But the primary course for those with little background, and with some fear and some concerns, but still with a desire to learn something about it, they would be interested in taking it. It's a hardnosed approach, I know.

. . .

HSM Well, my feeling toward the whole idea of computer education at this point, and trying to reflect the feeling of the High School Math Science, in our case there's so much happening right now, such as the five versus seven block discussion, we've changed the length of our program, we've cut our courses up different ways and we're now trying to get materials to supplement those new outlines that we've got, that's right on top of our minds. And until that settles in I don't think anyone's going to be too enthusiastic toward anything else. We're just at the point now where we're trying to be sure we've got the basic product out to the students. The worksheets that go along with the various courses.

Q So it's just a bad time . . . ?

HSM It's maybe a bad time for High School. Personally, I'm doing a little bit of work on it now. I know one of our High School math instructors, ____________, has used it a lot in her Math 20B. The section on polynomials. And it's worked beautifully. She carts the thing in there and they play around with it, and it works pretty nicely. So there's something being done now. But as for the word processor I don't know much about it.

. . .

HSM You know what crossed my mind as I was feeling this out, and I've talked to a few math people, not English, the conversation got around to remember what happened with modern math? And we went back and looked at all the educational things that laid an egg. And, fortunately or unfortunately, the fact is these computers are not going to lay an egg. They're here.

HSE They're thinking bandwagon approach, aren't they? And of course education is notorious for that.

HSM I just heard on the news this morning that over in the Department there they're talking about computer-related courses grades one through twelve. And they're getting on with it. I guess they feel that unless the students have some familiarity with this they're going to be at a disadvantage.

Q So are there many of our staff who really think this is just a bandwagon that will disappear?

HSE Yes.

HSM Well . . . .

BEE I think so.

HSE I think they feel the cost of the things is great, and how could you really have enough to meet the needs. So we have how many Apples right now? Eighteen? That meets the needs of eighteen students. At a time.

Q With our latest increase in salaries, an Apple costs us about what it costs to employ an instructor for one month. And PLATO costs are taking another dive.

BEE Don't tell anybody that! (Laughter.)

HSE There was a time when the thing was A-V equipment, and schools went just crazy buying TVs and overheads and individual filmstrip projectors. And guess what the resource rooms are full of? All this expensive material that isn't being used. And I think that's what a lot of people are saying: I lived through that bandwagon.

HSM The TV, overhead, opaque projector era.

HSE That's right. They have a place and we all use them, but we found . . . . [unintelligible].

Item 41: What responsibilities can a student be expected to assume for his own learning?

Q Okay, I'm interested in some of the items starting with number thirty-nine and down, dealing with students' attitudes and preferences. Item forty-one struck me as fundamental: Most students in the program can be given major responsibility for their own learning. The answers are indeterminate. People don't know, or they aren't sure. And in pattern with some of the others, number forty-four: Students can be expected to seek help on their own when they need it. Again, people aren't sure. And number forty-three: Can students be expected to learn to manage their study time efficiently? Tending to think not, but very unsure. We don't have a statement about the adult learner, and some of the people I have interviewed have seen this as a problem. But what are some of the characteristics of an adult student which bear on or influence their ability to be responsible for their own learning.

HSE I think that's one of the main focusses of the lower level courses in High School, to teach them study skills, and part of that is time management. We do actually look at how long to learn efficiently, and when do you need to rest, how to study for exams and how to take exams. That's one of the reasons we have the individual block, so they can develop study skills they need. And you see quite a difference, for instance, from when they come in at the beginning to the end of the term. I think that's characteristic of adult learners -- they do not have good study skills. Not many of them. Those that do come in with it, that have good work habits and so on, they really progress.

BEE This is really on my mind now because I'm just going through a change in approach in Post-ESL. _________ and I have always given homework, to be handed in at eight-thirty the next day. I had problems last term with people who thought their responsibility was to please me. Why did you copy your homework? I did it for you, I didn't want to disappoint you. So this time I put it all on them: Alright, you're adult learners, this is good for you to practice, prepare this for tomorrow. The other day I counted three out of eighteen! Who had done what I suggested. So whereas ten weeks ago I had thought students were taking responsibility, they knew they had to practice, they knew they had to accomplish these things, now I'm just wondering.

HSM I wonder if that's just human nature. When you were at University your prof would say this would be a good thing for you to do for tomorrow, and opposed to. Get that done and pass it in. There's so many other pressures in the student's case. I'm not trying to blast your point, except that maybe we're the same way.

BEE When I was eighteen I was. But last year when I did a course I did my homework even when it wasn't handed in.

Q What did you conclude, then?

BEE I know I'm disappointed, surprised and disappointed. But I still prefer the new way. I don't think I should have to be teaching grade three, which was what I was doing. The homework had to be done, the homework had to be in, I spent hours marking it, gave it back. they looked at the mark at the top of the page. some of them, and put it away. I kept thinking, What are they learning from this? Now maybe the Post-ESL are different but they really like having the demands made on them, the homework. They really like marks. They really like me to mark things. They're really unhappy if we just mark them in class and they mark their own. They want to show me they have the right answers, even if they copied them. Even if they do that. To me that's all wrong. There's no adult responsibility, or responsibility for learning there, on the part of the adult.

Q If you were to explain this to someone. to a Martian, obviously they've learned something. What have they learned something. What have they learned about homework?

BEE What have they learned about homework? Well, they've learned to please me, that's all.

Q You say you spend hours marking it. If I were to guess I would say what they've learned is homework is very important to you. And because it's so important to you and because you're so interested and they like you they're not going to disappoint you.

BEE But these are adults, that's what surprised me. I know this happens in grade three but I didn't realize the same thing was happening with adults.

HSM It's universal.

BEM The way I tend to handle it in math is I don't mark the homework. I tell them I expect an hour of homework outside of class, on drill and practice, but I give them the answer key for all of the homework exercises. So they are left on their own to do that. However, I certainly am not trusting them to do it. I give a short quiz two times a week, and if they're not over sixty-five on that they have to take it and try to make corrections and come back to me. In effect I'm trying to say to them, If you're not doing the homework you're not going to be getting the grades. Now some of them, of course, will do the homework and still not pass the tests. But it is sort of an incentive, because then again they're hung up on the mark thing. But it's to keep tabs on it and not let them get too far behind because the math courses are so cumulative. If they fall behind any amount it's very difficult to leave all the onus on them, and say, Okay, it's up to you to do the homework or not. Because by the time it catches up to them in any major quiz they are pretty well out of it.

BEE They're out of it. But isn't that their problem? We're discussing this a lot right now in the 7 - 9. If we're going to approach it this way, that this is your responsibility, do it or else. The problem is there doesn't see to be any "or else." Are we going to fail people? Are we going to prove to them they should have done it?

HSM Maybe this is one of the swings of the pendulum again. Maybe the one extreme is to mark everything and the other is to mark nothing and put it all on their shoulders. Not that I have the perfect method but what I do in the math, though, is I say, Look, here are the chapters we take. I suggest you do every odd question in the book. The answers are there. Then I supplement that with worksheets which I take in and mark, which goes toward their final mark. I expect that they do the homework but if they don't I find out on the worksheets.

Q The worksheets are done as homework, too?

BEE I do that, too, except that as I look around the room I find myself still checking, still counting who has prepared and who hasn't. Maybe it's my problem. I still get upset about the people who aren't doing it.

HSM All I'm saying is maybe over at the University right now there's some doctors doing their last four months of work before going out into the field, and their profs are in the staffroom having the same conversation. Not just here at AVC with our adults. I think we all tend to do more on things that are handed in.

I'm wondering why you're asking these questions, or why you're focussing on them. If it's tied into computer work or work on individualized programs I feel throngly that one of the goals of education ought to be to make the learners independent learners. And I think that happens and is possible in the higher levels. It's a continuum. But it becomes more and more possible at the higher levels, as you go on. I would think it would be easier for a Math 30 student to learn the whole course through a program than my Math 10. I have to move them along, reinforce their reading skills, teach them those things they have to know to get their time organized, all those things. It's a continuum. I've heard that there are many post-secondary institutions in Alberta that teach upgrading as we do, the students come in and they say, Here's the program, go to it, come and see me if you have trouble. And then the students are all working one on one. Maybe that's what's in the back of people's minds when they're responding to questions like this. That bothers me! Number one, I'd hate to work in a place like that. Number two, they wouldn't learn a . . . . What's the role for the teacher? If they can learn it without you, let's all go to Correspondence. I guess a person's ego gets involved. Either they have the skills before hand, or if they don't you don't help them get them. Those that are successful in that sort of approach . . . .

Q I took statements forty-one, forty-three and forty-four from a composite of Knowles, Kidd, and Bloom. When you read in the adult education literature, over and over that's what they say: Adults want to control their own learning, they want to direct their own learning, they want independence, one-to-one contact with the instructor, not anonymity. That the litany.

BEM There's a problem in that, too, in that one talks about adult students. I read a lot of this, that they're well motivated, independent learners. Adult students are a great, broad range. They're the people at the University, the people taking continuing education courses for enrichment. Those adult students are not our adult students.

Q Well, that's the problem of definition, isn't it? One definition of an adult student is someone who wants independence. So it could be a five year old. And then the methods and materials have to adapt to the desire to be self-directing. In our culture that desire hits about thirteen to fifteen, and it hits very hard after that if it isn't achieved. Now, whether it can be done in the classroom, well, students who will sit in a classroom and take a lecture won't take a lecture from someone on the street. If someone tries to tell them, You jaywalked, you shouldn't do that, they would tell them what to do. So at some point they have crossed over in their private lives but they haven't in school, and they're still willing to sit in rows and listen to us. But they may not do their homework! That's how they assert their adult independence. But, to answer your question, that's where that came from. The other items are things that are said in the coffee room and I thought it would be interesting to find out . . . .

BEE From what __________'s just saying, about what's true for the 30s but not for the 10s, we're almost looking at skill levels rather than age. Is that what you're saying?

HSM Yes.

HSE Definitely in English. It's a day and night difference teaching the Reading 10s, the 10As, those new people coming into High School. That's just a different ballgame. You have to lead them by the hand, show them carefully, give them a little more . . . .

BEM And it's not just skills, it's the process of thinking . . . .

BEE I wonder if they need it, or we give it?

HSE They need it. I've tried to just be very loose, and it hasn't worked. I've found that the more direction I give in the first few weeks the better result I got at the end of the ten weeks. And the more prepared they are for the next level.

BEM I'm sure it's the more independent learners who have the better skills in that area. And probably they are the same people who, in your Post-ESL, have to be checked over, but in Math Algebra or in your High School math they're not only doing every odd problem they're doing every even problem. Because that's their strength. And that's another human characteristic. I far prefer doing things I'm relatively good at. So they go home and they have the best intentions of doing their homework but they get caught up in their algebra. Their English isn't done so they copy that from somebody. The Post-ESL student remains, usually, very good in math. So in the area where they are at a low level they need your expert guidance.

BEE But I think they also expect to be spoonfed. They come in for four hours a day and sit there some of them very passively, and they expect their comprehension and everything to be improved by me . . . .

HSE That's right. It's your job, not theirs. I've heard that, even from one at the 30 level, the other day. Well, how was I supposed to know that? You did not do this for me -- that was your job.

BEE I think it's a carry-over from their earlier experiences in school . . . .

BEM But then it would carry over into math, too, and I find them very independent learners.

HSM Oh, definitely.

HSE And I think they're that way in the sciences, too.

HSM Oh, yes.

BEE Are they learning or are they refreshing their skills?

HSM A lot of them are refreshing previously learned skills.

BEM Some of them are refreshing, but then they get to a point still where they're learning. They're into new skills but again, they've got such a base to build on.

BEE One other question. Are they learning independently or are they learning from friends outside of class?

HSM Both.

BEM The ones I'm handling, as far as I know, they're doing a lot of learning there, just from the questions they're asking. They're very much with it.

BEE I've had students who've done Math 20 and even Math 30 at ________________, who could not manage in my class.

HSM I have had the same thing. We don't want . . . .

BEE What I'm saying is I'm not sure they are independent learners.

Q Is there a problem with the term "independent learner?" Does it mean learning completely without the teacher, or is the relationship determined by the student's perception of how much he's learning?

HSM Being able to survive in any learning environment.

Q Specific to AVC, using class time, using study time, using offers of extra help, labs. Does it mean the ability to learn without help, or the ability to get the help one needs?

BEM Probably to me it's someone who can listen to an explanation and carries that to the ultimate. Goes to the more difficult problems.

HSM I'm thinking of the independent student in math, being able to cope with my saying, Okay, we're going to take the quadratic formula. Here it is, I proved it, we can apply it. Give them one example and they're off. They have all those other skills, independence, they're able to read, skills on how to work with polynomials, all those basic things that I never have to mention again, and I'm thinking that's independence.

Q. Is independence related to aptitude? Or, to put it another way, could a very low level student with minimal aptitude learn to be self-directive in his learning?

HSM Bloom would say, given enough time, yes. I don't know.

Q You would be skeptical.

BEM I would be skeptical on that. It's a matter of degree. Certainly right now I can think of in my classroom the more independent learners are not the most intelligent ones in math. It takes them more time, they spend more time on their homework. More time mulling it over and thinking it over. But they have acquired enough skills to go on with it. But there's a bottom level to that. I've got some who just can't get a base there, no matter how many hours they're spending at it. There's certainly a reasonable correlation between those two. You've got the better reading skills, better problem solving skills . . . .

HSM Right. The independent learner needs very little drill.

BEM Yes.

HSM As opposed to those at the basic level where you take up a concept and you drill it and drill it and drill it.

Q Are we using the terms independent learner and self-directed learner as synonyms?

HSE I would think so.

HSM To a certain extent, yes.

HSE I'm not sure how that really ties into the idea of responsibility completely, either.

Q Try this out. I would call a self-directed learner one who is responsible for his learning, but an independent learner is one who is so bright, and has such a broad base of prior learning, that nothing new is likely to throw him for long.

The person who can take the manual for the Apple and figure it out. Or the one who can take the algebra textbook and figure out polynomials from his general math background. Whereas one with a very low level of general education may not have very much skill, but one of the skills he does have is the ability to muster the resources he needs to learn, whether they be human or mechanical or paper and pencil or whatever. And will get the help, and will know when to ask for help.

HSE And you're calling that self-directed?

Q Self-directed, yes. And that person, then, has taken responsibility for the level of learning be wishes to achieve, whatever that might be.

HSE In the English, I was just thinking the other day, we're doing the last major assignment. And my very intelligent students are the least independent, and the least self-directed. And they're doing probably the worst job.

HSM Isn't that interesting! Run that by me again. Your . . . .

HSE The ones that I classify as my most intelligent are also probably my most immature. They are the least self-directed.

Q Would you call them irresponsible?

HSE Yes, I would label them irresponsible in all aspects of this particular assignment. They certainly have the ability, knowing their reading and writing skills. A couple of others in there who are not really strong students at all, with direction from me, have done each step of the process that's needed.

BEM Did it only happen to these students on this one assignment?

HSE Oh, no. I'm saying there are people in my classes who keep doing these things. And I think maybe that's quite common. Often in the English area we find it's the self-directed learner who's quite successful. The ones who aren't go write the Department of Education exams and get into University with that mark.

Q Without the maturity to monitor their own learning. So if we could put it this way, the brightest students are not necessarily the most self-directed, and . . . .

HSE And not necessarily the most successful. If you get a bright light in your classroom they can have more insight into literature. But they may not have the writing skills or the discipline. They may do well in other areas but be held back because of English, and that's just because they don't direct their efforts.

HSM That's such an important point, about work habits. What I try to do is emphasize a process. I say, Look, I don't just expect an answer. I expect legible writing. I expect all sorts of things in math.

HSE It's so important in English, especially when you have the longer term assignments.

HSM That's right. The point I want to make is, because that's my style, I would have to repeat my sermons, if I were one on one, over and over. So maybe there's a happy medium where you have lecture, some individual work. Maybe an eclectic approach is the way we have to go. Sometimes you're using the computer to supplement. And I like a program where the material's there, if the student wants to go off and work ahead, fine, but it's there for the slower student to go over and over again.

Item 47: How much standardization of curriculum is desirable?

HSE I have some comments on standardization, and how much would be desirable. I think quite a lot if you're looking at giving credits, and having this sequencing and continuity of programs. You can't always rely on the degree of professionalism of staff, all the time, either. So at least if you have some set exams and you have material available and the objectives stated you can be sure they will get some of it at least. You can't just do your own thing at this level. It just doesn't work. Also with the changing numbers, I think this time there are seven classes. How many new people are going to be teaching at that level? And we've certainly determined that 10A is where it's all at, because if we can give them the basic skills, sometimes they can jump to 20B from 10A.

Q So a standardized approach makes it fair for all classes.

HSE That's right. And it's good for scheduling, too. If a student has home problems or something and he can't get to class at eight-thirty, then the Senior Instructor knows she can put him into any other 10A and he's still going to get the same program. The sequencing might be a bit off, but that teacher will fit him in.

. . .

BEM So, to go back, how do you think we should look at standardization? Last year that committee worked on a standard format for curriculum development. NowI don't know whether in this question they would have associated that with now having a standard format. Or standard approach. Because I can see people thinking maybe a standard approach is a little too limiting, if you're meaning one way. As opposed to a standard format for development, having your needs assessed and your objectives set out, et cetera.

Q They would agree to a broad standardization? Or what degree of standardization would people find compatible?

HSE Well, we are following that format in our curriculum development. Are you following that format?

HSM Yes. What we are trying to ensure is that all teachers teaching Math X, whatever it is, use the same outline, over the same content, share materials and whatever, but as to a standard curriculum, if by that you mean worksheets and modules and whatever, that's left to the individual instructor. Personally, I can remember, I answered very negatively on that. I don't see the advantage of a standard curriculum. My thinking on that is the success of my students is dependent on what I do. I could have the best curriculum, the best stated objectives in the world. That doesn't translate into student success, necessarily. A good teacher can make a poor curriculum work, and the converse is true, also. The best curriculum in the world, with someone who is not keen on it, will result in it not working.

HSE Except that if you do have a degree of standardization in your curriculum, and you have a poor teacher, your self-directed student will get a fair amount on his own.

HSM If the program is set up in such a way that it could work on an individualized basis, that's a big payoff.

HSE Yes.

HSM I agree one hundred percent on that.

HSE And I mean, I'm sorry we don't have one hundred percent excellent teachers who care one hundred percent about our students. And that concerns me terribly.

Q When you think back to the curriculum work that was done last spring, and the efforts to develop a common approach, what was the outcome of the committee work? How do people reflect on that now? What did we accomplish?

HSE I feel we did accomplish a degree of standardization that was probably needed. And it made us reflect a bit more closely on whether our objectives were for the teacher or for the student. That's two separate entities entirely, though they're related. Following that. I did the Phase books, in which I did apply that formula. I think it did serve useful guidelines. In Social Studies that seemed to be the outcome, as well. In the Geography course that ____________ and ____________ set up, too. All I ever hear from the teachers who teach it is how good a course it is and how well it's going. And this is from new people as well, like __________. They're so enthusiastic about how everything is set out and the materials are available. And they don't feel confined by it. I can remember teaching a new course and feeling really confined by it, just like I was going in with somebody else's lesson plans. Like you said, you can't do that. That isn't what we want.

HSM What was standardized? The unit outline, the objectives, the overall course, the objectives of each subunit . . . ?

HSE And the materials.

HSM And the materials to supplement that.

HSE Uh-huh.

HSM Okay.

HSE But we're not saying that you have to do this, this and this, but we're saying that there are the materials, and also the individual workbooks are standardized so these concepts are taught. They have practice exercises and they have answer keys, so that if the student doesn't even get the instruction if he does the exercises, and does the reading that is necessary, and is given the teaching handouts, then goes to the practice exercises and does the marking on his own, he will have gained considerably. Not as much as he would have if he had a good teacher in the classroom doing everything. But we have to be concerned with that, too. Also we looked very much at the sequencing of skills. Which skills are required at this level and which skills are required at that level and where is our focus. Where is our focus now and where should the focus be? Should we be focussing more on literature or should we focus more on expository material? I think that was important. Now we're looking at the allotting of time. How much time are we spending, what percentage of time is being spent on these different things, and is that realistic? Are we spending too much in one area and not enought in another? And we're looking at, as __________ likes to say, the scope and sequence.

HSM That is the nub of the issue in High School. I don't know about Basic Education, but in High School Math and Science all the talk is on time. It gets back to Bloom's idea, I guess: given enough time, all the students can succeed. So we don't look at curriculum. We're saying, Can we finish the course? Bare-bones. And that has been an issue for about a year now, so that has maybe flavored the responses. It's hard to figure out where people are coming from, but it seems to be a pressing issue right now.

HSE I think we need to, in the High School, go out there and find out what is the final product supposed to be? And not go beyond that either. I don't think we should penalize our students by making them have more . . . .

Q When you say "out there," do you mean to the public system?

HSE No, I mean . . . .

HSM Let's not get into that! (Laughs).

HSE . . . into NAIT, or into University, or whatever. We must give them the skills that any student in Alberta would have, but not more or less. And I think that's the important thing.

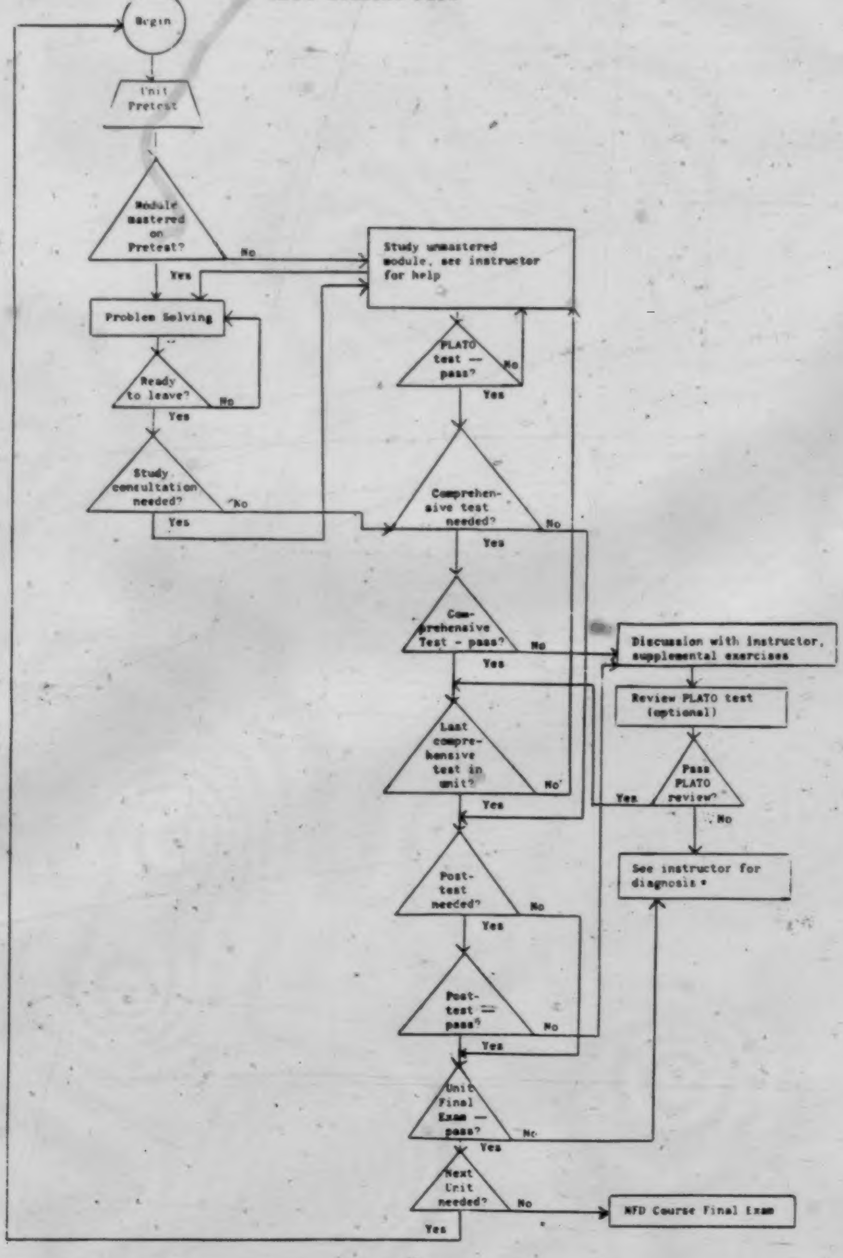
BEM Not overkill.

HSE That's right. And I feel that very much. I'm going to be going out to a few schools, I think. It's an important issue. It has to do with this approach to curriculum. As I said, I'd sure never like to see curriculum laid out in lessons, and you went to this, this, and this. That's what bothered me in doing those Phase books, when I was asked to annotate. I thought, Good heavens! I sounds like it's going to be me teaching in front of each one. But I tried to say, "Teacher's suggestions" throughout, in each one, but it depends on how others take it, and the degree of professionalism they apply to the information.

APPENDIX R

MFDO Student Flow

MFDO Student Flow


Begin
Unit Pretest
Module mastered on Pretest?
No
Yes
Study unmastered module, see instructor for help
Problem Solving
Ready to leave?
No
Yes
Study consultation needed?
No
Yes
PLATO test -- pass?
No
Yes
Comprehensive test needed?
No
Yes
Comprehensive Test - pass?
No
Yes
Discussion with instructor, supplemental exercises
Review PLATO test (optional)
Pass PLATO review?
Yes
No
See instructor for diagnosis *
Last comprehensive test in unit?
No
Yes
Post-test needed?
No
Yes
Post-test -- pass?
No
Yes
Unit Final Exam — pass?
No
Yes
Next Unit needed?
No
Yes
MFD Course Final Exam

*Student may receive special course of studies, or return to flow.

APPENDIX S

Transcript, Sample Student Interview

Interview with R. S., December 13, 1982.

Q. Is this your first term here, or how long have you been a student?

A. Second.

Q. Second. So you started in September, then.

A. Yeah.

Q. How's it been, going back to school?

A. Different. Uh, from high school to this school is a big difference. Like I've. . . . There's a lot of things here that I never knew.

Q. Uh-huh.

A. Because they never taught us in high school.

Q. In the order of math and English.

A. Yeah. Like in math I never took decimals and fractions. When I took high school math we did it with adding machines and calculators. We didn't use our brains at all, we just pressed buttons. That was it.

Q. How long ago was that?

A. Six years.

Q. In town here? Or where?

A. Yeah, in Edmonton.

Q. Yeah. So you're getting some new stuff . . . .

A. Yeah.

Q. How are you finding it?

A. Hard! It's really hard. Even my sister -- she just graduated last summer -- hasn't got a clue of what I'm doing. She can't even help me out.

Q. And she graduated grade twelve?

A. She graduated grade twelve.

Q. So . . . this is hard in the sense that it's new, you haven't done it before . . . .

A. Right.

Q. . . . and it's apparently not the same as what they're getting in at least some high school classes.

A. Right.

Q. Okay. Are you surviving?

A. Oh, yeah. I'm learning it. Last term I was totally lost. So, when they told me, when, uh, [the instructor] told me I had to re-do this I figured great! Because . . . .

Q. You were glad . . . .

A. Yeah. Well, I hadn't learned anything. Like, I did. I learned to do fractions -- I can do fractions but it's the decimals that are holding me back. So I figured, great. This way I get a second chance. To learn it.

Q. Yeah. You might as well get it if you're going to do it at all.

A. Yeah.

Q. What's your goal?

A. Okay. I want to go through here and get my RNA [Registered Nursing Assistant]. Work for a couple of years as an RNA at the Children's Hospital in Toronto, and then I want to go through and become a pediatrician. Eventually.

Q. Ah. Okay. Have you ever worked in a hospital before?

A. Yeah, I worked in Fort Saskatchewan hospital.

Q. So you're going to need a lot of schooling between now and the end of that preparation.

A. Yeah.

Q. Okay. Just still talking about AVC generally. If you could change anything about the place what would it be?

A. Uh, okay. The only thing I find different is, what one teacher taught us last term is not what this teacher's teaching us this term. Like, this teacher's contradicting the other teacher.

Q. Ah.

A. Like saying, No, that's not how it's supposed to be done, this is how it's supposed to be done. And yet last term I spent that time learning the other way. So it's really two different things.

Q. And that's causing you some complications.

A. Conflict. Yeah.

Q. Okay. Just talking about, uh. . . . What was your best subject in school?

A. My best?

Q. Yeah. What is right now?

A. Here?

Q. Yeah.

A. Um. . . . This term?

Q. Yeah.

A. Okay. The only subject I'm really enjoying this term is science.

Q. Is that different? I mean, in the past what has it been?

A. Mmm. Okay, for the last term . . . was . . . geography. That's with the maps and that.

Q. Yeah, right.

A. Geography.

Q. So it's science this time.

A. Uh-huh.

Q. So, what is it you like about science?

A. The teacher's a gas. Like, she can take a joke and she can throw jokes back. She . . . um . . . . If you don't know something . . . . Like if she says something and you don't know it she will go into great detail to explain it til you do know it, okay?

Q. Uh-huh.

A. Her way of teaching is completely different.

Q. Hmm. What's different about it?

A. Umm. Let's see. She's not one to stand over you and say, You have to do it my way, or else get out of my class. She's one to say, Okay, like this is how you were taught, and this is how I'm teaching you, and you're going to have to do it the way it goes here in order to get the marks. Okay? So it's like there's no conflict. She's not . . . . She doesn't treat us like she's the teacher and you're the pupil and that's that. She teaches us on the same level. You know, like we're adults and she's an adult and we can communicate.

Q. Okay. So how would you say things are going right now? Are you happy with your courses? And the way things are working out?

A. Yeah. Uh . . . I'm really looking forward to going into ten. Grade ten.

Q. Okay.

A. See. I want to take . . . . I want to get into grade ten and take psychology. I've been doing some research and that on my own in psychology. I have a . . . . There's a lady that I know. She gets me into different organizations. Like I was helping her with rape crisis, and suicide crisis, and, um, incest, and stuff like that. And a lot of psychology and stuff goes into that, so . . . .

Q. Yeah. And you want to keep that up.

A. Yeah.

Q. Okay. Now just focusing on math for a while. How is math going for you?

A. This term, great! I'm really . . . . I find with the work we do in the classroom, and with that machine /PLATO/ it's really interesting. I'm really learning. Back and forth. From both paperwork and that machine.

Q. Good.

A. The decimals. Like I . . . . I'm sure I can sit down and do decimals like nothing now.

Q. Uh-huh. Okay. Would you make any changes in the course if you could improve it? Uh . . . . Any adjustments . . . ?

A. Not really. (Pause) I think everything's up to par.

Q. You like the way it's going.

A. Yeah.

Q. Okay. Anything you don't like? Anything that's not as good as the rest?

A. (Laughs) The problems. Last term there was five steps to doing problems. And this term all you got to give is just the answer and show how you got the answer.

Q. Problem-solving. Like can you read an . . .

A. . . . Yeah . . .

Q. . . . example and you have to figure out . . . .

A. Right, the answer for it. Like, um, I wrote that today. I got thirty-six on it.

Q. Is that good or bad?

A. That's bad!

Q. Ah. Thirty-six percent.

A. Thirty-six percent. Like, that's lousy. And I tried telling /the instructor/, I really think you should give me a better mark because I put a lot of effort into this. It's just, . . . Um . . . . The only problem I had with problem solving was kilometres, and grams, and metres, and stuff like that. I don't know how to convert those.

Q. Okay. And you had to do some conversions, did you?

A. Well, there was one on there. If you bought one hundred grams of Shredded Wheat for a dollar ninety-five you'd get two hundred grams, or its two hundred and fifty grams for three ninety-five. Which is a better buy?

Q. Hmm.

A. So I just took a guess and said the two hundred and fifty grams would be a better buy, okay?

Q. Usually they are . . . .

A. Yeah.

Q. But it wasn't.

A. But it wasn't.

Q. Okay.

A. Okay. And I don't understand why it wasn't and how to get the answer.

Q. And you didn't know how to work it out.

A. No.

Q. Okay.

A. Okay. And there's some on gas, like if you paid one forty-seven for . . . . One . . . . A dollar forty-seven, or . . . . A dollar forty-seven. . . . No, one . . . forty-seven cents, or something like that. And it . . . there's . . . . You need to fill up a tank of gas at eighty-six point something.

Q. Hmm.

A. I didn't have a clue how to do that, either.

Q. Okay. Do you know what to do about that now? You ran into the problem today. Do you know . . . .

A. Well [the instructor] didn't explain to me how to get the answers.

Q. Okay.

A. But like he said he's going to give me more like that because that's where I'm stuck.

Q. Okay.

A. Starting tomorrow, so . . . . (Pause)

Q. Are you happy with that?

A. Yeah, because then I'll learn, you know. How to do it.

Q. Okay.

A. Because I can't say, Okay, I'm doind great in math. Pass me. And they can't say, She's doing excellent in math. Pass her. And then go into the next level and not know what in the hell I'm doing.

Q. And have trouble.

A. Yeah.

Q. That's right. So you'll be able to get the extra help, you feel?

A. Yeah.

Q. Okay. (Pause) Where do you do most of your studying?

A. At home.

Q. Do you ever study here?

A. No.

Q. How come?

A. Because I start at eight thirty in the morning and I'm finished at twelve thirty at noon and I just go straight home.

Q. Okay, so there's no time during the day.

A. No.

Q. Okay. Is it a good place to study at home? Do you have a quiet place?

A. Yeah. I have a desk and that in my bedroom. And I just lock myself in my room and do my studying.

Q. Okay.

A. And then my fiance helps me for my exams, he helps me study.

Q. Okay. How long do you study each night, would you guess. On average.

A. I'd say about five hours.

Q. Five hours a night?

A. Five hours.

Q. Are you pretty tired at the end of that time?

A. Sometimes. It depends on what I'm studying on. Like math and English is what's giving me the hardest problem.

Q. Okay. When you're studying all that time is it frustrating or is it going well, or how is it?

A. Okay. This term it's not frustrating at all. Last term the math was very frustrating. Extremely frustrating. I'd get really mad and just heave the book in the corner and say piss on it. (Laughs) I don't care if I learn this garbage. I don't understand it and the teacher hasn't got the time to explain it to me. You know, because like . . . . The problem I found last term was the teacher would write it on the board one way. And then I would do it that way on the test and she would say, No, that's not how it was supposed to be done. So I was getting all bungled up inside as to how it was supposed to be done.

Q. Yeah. It was frustrating.

A. Yeah.

Q. But that's not bothering you that way this time?

A. No.

Q. Okay. Do you have any questions or any suggestions? Anything that's been on your mind either about math or about things in general?

A. Okay, well, with doing this math, I want to know if I don't complete all the decimal things, and if I don't complete all the fractions, do I go into the next term?

Q. . . .

A. I don't.

Q. No. I wouldn't do any good . . . .

A. So, there's not very many weeks left of this . . . .

Q. Not very much.

A. . . . term, if you're still in decimals.

Q. Yeah. Um. Mind you, decimals is sixty or seventy percent of the course. It's most of the course. It's the most important part.

A. Uh-huh.

Q. You should know the decimals best of all. Because when it comes time for the final exam, twenty-five or thirty percent of the questions will be on fractions, whereas sixty-five to seventy percent will be on decimals.

A. Uh-huh.

Q. So, if you were right now into about the fifth or sixth week of this term . . . .

A. Right.

Q. So you've got about four weeks left, not counting the break. Maybe five. So if you spent, say, maybe, two more weeks on decimals and then three on fractions . . . .

A. Uh-huh.

Q. You'd probably do pretty well on the final.

A. Okay. Because I know I can come down here and do the exam things.

On this machine.

Q. Uh-huh.

A. And, like, the only problems I'm having with this machine is to remember which buttons to press.

Q. Oh. Yeah.

A. Because the first time I did it, I wrote out may answer, right? And I press that ANS /the answer key/ thing?

Q. Uh-huh.

A. And it didn't say, Correct. Because I pushed the wrong button for decimals.

Q. Oh. You entered your answer wrong.

A. Yeah.

Q. Okay.

A. Okay, but it was the right answer. It was just entered wrong.

Q. Yeah. You may have left the decimal point out or something.

A. Well I . . . . Okay, you had to show me, remember, which . . . .

Q. Yeah, that's right.

A. . . . button to press, okay. And I can do it down here on this machine, okay. But then /the instructor/ gave me a paper in the classroom.

Q. Yeah.

A. And I got quite a few wrong on that paper because I got really nervous and scared.

Q. Are you generally nervous on tests?

A. Yeah.

Q. Are you? Okay. We like you to . . . . You can unlearn that, too. You can learn to be calm on tests just as you can learn to do addition. And part of that is being ready for the test but the other part of it is maybe the things you do when you start a test. Is it getting any better?

A. Umm. (Pause) Not really. It's like the first time I worked on the machine. To write that test. And you were standing over me.

I couldn't do it. (Laughs)

Q. Sure.

A. And then when I came back and I was writing them and you weren't there, I had not problems and I wasn't scared. Okay? And, um, I think it's just the fact of having somebody superior standing over me. Saying, you know, . . .

Q. Makes it harder.

A. . . . you got to pass this.

Q. Okay. If you, uh, continue to be nervous on tests be sure to tell the instructor, I think I could have done better but I was nervous. Then the question is not can you do the math, but how can we get you over this nervousness.

A. Nervousness. Yeah.

Q. If you ever blow a test because of nerves and you think you know the math, discuss it with the instructor.

A. Yeah. It's like I wrote an English exam on Friday, and she gave it back to me today. And she asked me what happened. She says, I know you're capable of passing this test. Okay? And I got forty-two on it. And I told her, I said, I just get really nervous. Because I know everything, but I have really had problems putting everything down on paper. Because most of my high school we didn't have to put anything down on paper.

Q. So that's new, too.

A. Yeah.

Q. Well, instructors like to know that. If you feel that nervousness got you, and you know more than you showed, it's always good to discuss that with the instructor.

A. Hmm.

Q. And if you find these problem-solving exercises are harder than what you're doing at other times that's something maybe to discuss with the instructor, too. It might be how you're reading the problems, or how you're setting them up.

A. Uh-huh.

Q. Because problem-solving is really what this is all about. You have to be able to use the ability to add fractions or whatever in the problem-solving.

A. Right. Well, it's just . . . . the only thing in the math that I found, right now, that's really got me messed up is the metric thing. And like /the instructor/ said to me when I told him I couldn't do it, because it's metric, he told me he says, Well, don't even think of it as metric. Think of it as, like it says eight point five millimetres . . . .

Q. Yeah.

A. He says think of it as eight point five inches.

Q. Yeah.

A. Even still, I couldn't do it.

Q. Yeah. It threw you off.

A. Because I know there's that difference. In, you know, inches and metres. So . . . . (Pause). I still couldn't get it.

Q. Well, there is a unit on metrics in the course if you get to it in time. So maybe a little bit more information might help you, too.

A. Yeah. Well, do I have to stay on the problem-solving, or can I go on with the . . . .

Q. Well, we like you to be doing both. Because the problem-solving, as I say, is the thing that it's all about. And, the sooner you can use what you're learning there on the problem-solving, the better.

A. Uh-huh.

Q. Sure, it'll be rocky at first but it should get better. If it doesn't get easier, if you don't get better marks, then you should discuss the problem with the instructor.

A. Yeah.

Q. See what . . . .

A. Well, that . . . .

Q. The problem is . . . .

A. But you know when you go through the first unit thing, on the Plato, and the /the instructor/ gives you that one paper /the Comprehensive Test #1/ . . . .

Q. Yeah.

A. Okay. When I wrote that I was really nercous about writing it. And the ones I got wrong on it he made me redo this one sheet. And I did that and I got them all right.

Q. Okay. So that's . . . .

A. So he passed me.

Q. . . . a sign you did know it.

A. Yeah. So he passed me. He told me I know what I'm doing.

Q. It was nervousness or something that got to you.

A. Yeah.

Q. Okay. Anything else that's occurred to you?

A. No.

Q. It sounds like you're determined to carry on.

A. I have a very, very strong determination to get into med school.

Q. Okay.

A. And I've got a lot of people pushing me. Like there's been a lot of times I've thought, I'm sick of this. I'm going to terminate.

Q. Okay.

A. But everyone keeps saying, You can do it.

Example Interview Analysis

Below is an analysis of the preceding interview using a somewhat modified procedure proposed by Giorgi (1975). The procedure consists of 1) analysis of the interview into "natural meaning units" and "central themes," and 2) separation of "structure" statements (those related to the "what" of the question/answer) from "style" elements (statements revealing "how" the respondent experienced his answer and came to his understanding of it). After this analysis the "structure" portion was returned to the interviewee for validation. The "structure" statements were intended to focus on general convictions, rather than the specific reasons or experiences given for holding or developing them.

Natural Meaning Unit	Central Theme
1. From high school to this school is a big difference. There's a lot of things here that I never knew. Like in math I never took decimals and fractions. When I took high school math we did it with adding machines and calculators. We didn't use our brains at all, we just pressed buttons. That was it. AVC is really hard! Even my sister -- she just graduated last summer -- hasn't got a clue of what I'm doing. She can't even help me out. But I'm learning it. Last term I was totally lost. So when they told me I had to re-do this I figured great! Because I hadn't learned anything. Like I did. I learned to do fractions. I can do fractions but it's the decimals that are holding me back. So I figured great. This way I get a second chance. To learn it.	1. Coming back to school is different and hard because previous schooling was poor. The student feels she is learning even though she was lost last term, and had to repeat courses this term. She feels her ABE courses are harder than those completed by her sister, who is a high school graduate.
2. I want to go through here and get my RNA [Registered Nursing Assistant], work for a couple of years as an RNA at the Children's Hospital in Toronto, and become a pediatrician eventually. I have worked in Fort Saskatchewan Hospital.	2. The student's goal of pediatrician is massively ambitious, if not completely unrealistic. The reasons for her choice of goal are not clear, though her secondary goal of RNA is not necessarily completely out of reach.

Natural Meaning Unit	Central Theme
3. The only thing I find different is what one teacher taught us last term is not what this teacher's teaching us this term. Like, this teacher's contradicting the other teacher, saying, No, that's not how it's supposed to be done, this is how it's supposed to be done. And yet last term I spent that time learning the other way. So it's really two different things.	3. Some instructors have appeared authoritarian and contradictory to the student. She finds these attitudes both confusing to her learning and insulting to her as an adult.
4. The only subject I'm really enjoying this term is Science.	4. The student doesn't seem to have a "best subject," but is enjoying one.
5. The teacher's a gas. Like, she can take a joke and she can throw jokes back. If she says something and you don't know it she will go into great detail eo explain it until you do know it. She's not one to stand over you and say, You have to do it my way, or else get out of my class. She's one to say, Okay, this is how you were taught, and this is how I'm teaching you, and you're going to have to do it the way it goes here in order to get the marks. Okay? So it's like there's no conflict. She doesn't treat us like she's the teacher and you're the pupil and that's that. She teaches us on the same level. You know, like we're adults and she's an adult and we can communicate.	5. The key to the student's enjoyment of this class is the teacher's careful application of her authority. In fact, the teacher is quite authoritarian, but not abrasive. Her sense of humor is also appreciated, as a sign of her egalitarian attitude toward her students.
6. I'm really looking forward to going into ten.	6. The student is most looking forward to having her present courses over, and being promoted to high school.
7. I want to get into grade ten and take psychology. I've been doing some research on my own in psychology. There's a lady that I know. She gets me into different organizations. Like I was helping her with rape crisis, and suicide crisis, and incest, and stuff like that. And a lot of psychology and stuff goes into that.	7. The student wants to get into courses which will allow her to draw on her outside experiences

Natural Meaning Unit	Central Theme
8. This term, math is going great! I find with the work we do in the classroom, and with PLATO, it's really interesting. I'm really learning. Back and forth. From both paperwork and that machine. I'm sure I can sit down and do decimals like nothing now. But doing the problems is still not easy. Last term there were five steps to doing problems. And this term all you got to give is just the answer and show how you got the answer. I wrote a test today. I got thirty-six on it. That's bad! Thirty-six percent. Like, that's lousy! And I tried telling the instructor, I really think you should give me a better mark because I put a lot of effort into this. The only problem I had with problem solving was kilometres, and grams, and metres, and stuff like that. I don't know how to convert those.	8. The student is enjoying math, and feels she is learning and has now mastered decimals. Still, her marks are not good. She blames her problems on the fact that she is not required to follow a prescribed problem solving format this term, as she was last term, and on the metric system.
9. There was one problem on there. If you bought one hundred grams of Shredded Wheat for a dollar ninety-five you'd get two hundred grams, or it's two hundred and fifty grams for three ninety-five. Which is a better buy? So I just took a guess and said the two hundred and fifty grams would be a better buy.	9. The student tries to recall a problem which confused her, and the answer to which she was forced to guess at.
10. But it wasn't. And I don't understand why it wasn't and how to get the answer.	10. The student admits both that she got the wrong answer (which she guessed at), and that she still doesn't know how to solve the problem.
11. And there's some problems on gas, like if you paid one forty-seven for . . . one . . . . A dollar forty-seven or . . . . A dollar forty-seven . . . . No, one . . . forty-seven cents, or something like that. And it . . . there's . . . . You need to fill up a tank of gas at eighty-six point something. I didn't have a clue how to do that, either.	11. The student tries again to explain a problem she had trouble with, and again concludes by admitting frustration with her lack of success. She hints that the instructor should have recognized her problem and assisted her.

Natural Meaning Unit	Central Theme
The instructor didn't explain to me how to get the answers. But like he said he's going to give me more like that, because that's where I'm stuck.	
12. Then I'll learn how to do it. Because I can't say, Okay, I'm doing great in math. Pass me. And they can't say, She's doing excellent in math. Pass her. And then go into the next level and not know what the hell I'm doing.	12. The student realizes that she has to demonstrate she has learned before she can expect the pass. (This is contrary to the impression she gave earlier, p. 10, section 8, where she asked the instructor to pass her on the strength of the effort she put into the test.)
13. I don't study at AVC because I start at eight-thirty in the morning and I'm finished at twelve-thirty at noon and I just go straight home. I have a desk and that in my bedroom, and I just lock myself in and do my studying. And then my fiance helps me for my exams -- he helps me study. On the average I study five hours a night. Sometimes I'm pretty tired at the end of that time. It depends on what I'm studying on. Math and English is what's giving me the hardest problem.	13. Her full schedule prevents the student from studying at AVC, but she feels she has good study facilities at home. The amount of time she claims to study each night would be extraordinarily high for the typical ABE student. Some subjects are harder for her, and these cause her more fatigue.
14. This term it's not frustrating to study at all. Last term the math was very frustrating. Extremely frustrating. I'd get really mad and just heave the book in the corner and say piss on it. I don't care if I learn this garbage. I don't understand it and the teacher hasn't got the time to explain it to me. The problem I found last term was the teacher would write it on the board one way. And then I would do it that way on the test and she would say. No, that's not how it's supposed to be done. So I was getting all bungled up inside as to how it was supposed to be done.	14. The experience of studying, especially math, has been very frustrating in the past. Frustrations are blamed on a lack of consistency on the instructor's part. The student se the study of math as learning the teacher's directions, rather than as understanding the necessary mathemati operations. The student, in her moments of extreme frustration, articulated the fact that she did not see the relevance of what she was trying to learn. There is also some blame for the instructor, who does not teach her effectively.
15. I want to know if I don't complete all the decimal things, and if I don't complete all the fractions, do I go into the next term?	15. Having been forced to repeat cours once before, the student is obviously worried about what will happen if she doesn't finish this time, either.

Natural Meaning Unit	Central Theme
16. The only problems I'm having with PLATO is to remember which buttons to press. Because the first time I did it I wrote out my answer, right? And I press the Answer key, and it didn't say, Correct. Because I pushed the wrong button for decimals. But it was the right answer. It was just entered wrong.	16. The student says she feels comfortable using the PLATO computer, but occasionally forgets which buttons to use. This was a problem for her initially, and she had the experience of finding the correct answer using pencil and paper, but not receiving credit because of an entry error on the computer.
17. I get quite a few wrong on paper because I get really nervous and scared. It's like the first time I worked on PLATO, to write that test, and you were standing over me. I couldn't do it! And then when I came back and I was writing them and you weren't there, I had no problems and I wasn't scared. I think it's just the fact of having somebody superior standing over me, saying, you know, You got to pass this.	17. The student mentions nervousness for the first time as a reason for her poor performance on some tests. She is especially nervous when a teacher watches her during the test, but when she is not watched, she feels she can perform well.
18. I wrote an English exam on Friday, and she gave it back to me today. And she asked me what happened. She says, I know you're capable of passing this test. And I got forty-two on it. I told her, I just get really nervous. Because I know everything, but I have really bad problems putting everything down on paper. Because most of my high school we didn't have to put anything down on paper.	18. Her failure of a test, when the teacher thought she should have passed, caused embarrassment. The student blamed her failure on nervousness, but also cited her poor previous education, which failed to teach her how to express herself in writing.
19. The only thing in math that I found, right now, that's really got me messed up is the metric thing. And like the instructor said to me when I told him I couldn't do it, because it's metric, he told me he says, Well, don't even think of it as metric. Think of it as, like, inches, etc. Even still I couldn't do it. Because I know there's that difference. I still couldn't get it.	19. Again, the metric system is blamed for some of the student's trouble with math. She has already admitted to other problems, however, so this is not her "only" problem. She clearly is aware of and sensitive to the fact of her inability to "get it," even after special help and explanation from the instructor.

Natural Meaning Unit	Central Theme
20. When I wrote one test I had failed because I was really nervous about writing it. And the ones I got wrong he made me re-do, and I did that and got them all right. So he passed me. He passed me. He told me I know what I'm doing.	20. The student valued the opportunity to rewrite a test she had failed, and to show the instructor that she did indeed know the material. She was rewarded by having the instructor tell her that he recognized her ability.
21. I have a very, very strong determination to get into medical school. And I've got a lot of people pushing me. There have been times I've thought, I'm sick of this. I'm going to terminate. But everyone keeps saying, You can do it.	21. The student repeats her determination to pursue her ambitious goal. She also indicates that other people are aware of her intentions, and encourage her.

In this next section the central themes are distinguished as to whether they reveal structure (actual answers to the questions I have posed), or style (the experiences which have given the student the ability to provide the answers).

Structure (What)	Style (How)
1. Being a student at AVC is hard, both because AVC's courses are demanding scholastically, and because the student was poorly prepared academically by her previous schooling. The student feels satisfaction that she is learning, and that her work is challenging.	1. The student experienced failure at AVC; that is, she was not allowed to proceed to her next courses at the end of the term, but was forced to repeat. She has shown her work to her family, and has been gratified to see that even her more highly-educated sister cannot do some of what she has learned to do.
2. The student has a very ambitious career goal, but her intermediate goal (RNA) is realistic.	2. The student has some familiarity with hospital work, which may mean her goal of RNA is based on direct experience and observation. She has also researched the RNA field, and knows that AVC provides training for entry into it.

Structure (What)	Style (How)
3. Authoritarian teachers and teaching perceived as contradicting previous learning have been troublesome.	3. The student has had teachers who have been authoritarian, almost dictatorial, in their treatment of her. They have also repeatedly emphasized with her that she is a poor (confused, mistaken, disorganized) student.
4-5 The student has no "best" subject, but enjoys Science because the teacher is not authoritarian or patronizing. The attitude of the teacher toward the student is a major factor. The student is willing to accept direction from the teacher, provided her adult status is not denied or demeaned in the process.	4. The student has had failing experiences, but has found Science enjoyable because the teacher treats her with humor and adult-to-adult candor. The student respects this treatment, but does not respect teachers who have used authority dictatorially.
6 - 7. The student looks forward to leaving ABE and entering high school subjects, where, she believes, her experiences outside AVC and her non-academic expertise will be relevant.	6-7. The student has kept up her outside activities while at AVC, and feels these can be included in her AVC experiences in the high school Psychology course.
8. The student is of two minds about her experiences at AVC. She believes she is doing well, and is learning to do things she could not de before, but she knows that her tests continue to be poor. She feels this is unfair to a degree, because she does put in a great deal of effort. It seems unjust to her that she is not rewarded.	8. The student has found herself in the demeaning position of feeling she must excuse her poor performance on some tests. She has no explanation for the lack of correlation between her efforts and her results, except the metric system.
9-12. The student obviously does not understand the kinds of problems she is being asked to solve, and so is forced to guess at answers. When she is wrong, she does not know why. She is clearly frustrated by her lack of understanding and by the fact that she cannot get clear explanations from her teachers. Still, she does not blame the instructor, but accepts his promise to provide more help. She also accepts the institution's role of arbiter and standard-setter.	9-12. The student has had much trouble understanding problem solving, both in assignments and on tests. She has spoken to her instructor, and has agreed to his suggestions for further practice.
13-14. Problems in her studies include lack of opportunity to study at AVC because of her full schedule, and,	13-14. The student has tried to study on her own but, because she is often confused by the instructor's

Structure (What)	Style (How)
especially in the previous term, failure to understand what was expected of her. She blames the teacher's failure to take the time to explain things to her adequately, and her inconsistency in expectations between lessons and tests.	explanations (which are badly confused in her memory), she does not succeed. Her extreme frustration upsets her and causes her to despair that she can -- or needs to -- learn the material.
15. Uncertainty about her options if she fails again bothers the student.	15. The student has already been held back once and fears it will happen again if she again fails to complete all her courses.
16-20. The student is embarrassed and perplexed by her failure. Her explanations are nervousness, entering correct answers wrongly into the computer, metrics, and her poor previous education. The student wishes to avoid further embarrassment by finding a rational external explanation, and having it accepted by her instructors.	16-20. The student has had some experiences where she could explain her failures logically as a result of external conditions or factors. However, even with special help and explanations from her instructors, she has been unable to do some of the work. She has frequently been embarrassed by having to explain her failures and inconsistencies to instructors, and thus has developed a repertoire of plausible explanations.
21. Other people's expectations supply motivation for her to get into medical school.	21. The student has spoken freely of her goals to others, who now expectantly watch her strive to achieve them.

In the case of the student interviews validation of the structure summaries took the form of a brief second interview, rather than a written summary. In the second interview the structure statements were presented and correction or elaboration invited as follows:

> Researcher: Would you say that, for you, being a student at A.V.C. is hard because of the work and because your schooling as a child wasn't the best? But that also you feel you are learning now, so even though it's hard, it's worth it?

Although the procedure for validating staff structure summaries was different (chiefly in that a written summary was supplied for validation; see Appendix X for examples), the validation step for all interviews was central to the data gathering and analysis process. Colaizzi's advice was followed (1978:61-2):

> A final validating step can be achieved by returning to each subject, and, in either a single interview session or a series of interviews, asking the subject about the findings thus far. We can ask him, for example, "how do my descriptive results compare with your experiences? What aspects of your experience or of your existence have I omitted?" etc. Any relevant new data that emerges from these interviews must be worked into the final product of the research. (Emphasis Colaizzi's)

APPENDIX T

Student Contract - MFDO

"Welcome" to MFDO

Student Contract - MFDO

I understand that as a student in the MFDO class I will write exams based on certain indicated sections of the course on the dates listed below.

As a student in this class, I undertake to prepare for these exams by learning and reviewing as necessary so that I may be successful in proving both to myself and other interested parties in the school that I do know the material.

Successful completion of exam = 80%.

Exam Date	Exam Content
April 20	Understanding decimals (Objectives A, B, C, D, E, F, I)
May 4	Operations with decimals (Objectives J, K, L, M, N, O, P, Q, R, S, T)
May 6	Decimal final
May 13	Understanding fractions (Objectives A, B, C, D, E, F)
May 26	Operations with fractions (Objectives G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z)
June 14	Problem solving with fractions and decimals (Successful completion = 65%)

FINAL EXAM ON JUNE 16, 1983. Pass mark = 65%.

____

(Student Signature)

"WELCOME TO MATH FRACTIONS AND DECIMALS ONGOING"

This is a course that is specially designed for students who have had difficulty with fractions and decimals in the past.

In this course you are given the opportunity to work on acquiring the knowledge required to pass the MFD final exam on an individual basis and, more or less, at your own rate.

You should understand the following things about this course:

1) It is a 10 week course. If you are unsuccessful in this course you will be in a situation which will require you to choose an alternative vocational goal.

2) Attendance is kept and the attendance policy that applies to all other courses at AVC applies equally to this course.

3) You must accept primary responsibility for learning the material.

4) You are responsible for keeping track of your progress. The record keeping sheets are provided.

5) You should ask your instructor for assistance if you are having trouble with any part of the course. If the instructor is busy, of if you prefer, you can consult with another student about the problem you are having.

6) Your conduct in the classroom should be appropriate for an adult education setting. Exchanges of information between or among students is encouraged, but please always be mindful of other students who may prefer to work in a quiet atmosphere.

In addition to the above, the following parts of the program will be discussed in the first session of the course:

a) Learning modules
b) PLATO
c) Recordkeeping sheets
d) Supplementary materials
e) Problem solving
f) Distribution of marks (40% course exams, 60% final)

"HAVE AN ENJOYABLE AND SUCCESSFUL 10 WEEKS!"

APPENDIX U

Table 29: English 13 Students' Assessment of the "Word Choice" Module

Table 29: English 13 Students' Assessment of the "Word Choice" Module

Item	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	#	%	#	%	#	%	#	%	#	%
1. I enjoyed using PLATO	7	47	8	53	0	0	0	0	0	0
2. PLATO made it easier for me to learn this information.	8	53	5	33	1	7	1	7	0	0
3. I feel I learned this information better with PLATO.	6	40	5	33	4	27	0	0	0	0
4. Learning to use PLATO was easy.	9	60	5	33	1	7	0	0	0	0
5. I would like to use PLATO again.	6	40	7	47	2	13	0	0	0	0
6. Using PLATO helped me to know whether I had learned the information.	3	20	8	53	4	27	0	0	0	0
7. I would have learned the information just as well without using PLATO.	0	0	2	13	8	53	5	33	0	0
8. I learn better from a teacher than from a computer.	0	0	0	0	13	87	2	13	0	0
9. I found this information easy to learn.	2	13	9	60	4	27	0	0	0	0
10. I enjoyed studying this information.	2	13	10	67	2	13	1	7	0	0
11. I knew how well I was doing when I was using PLATO.	5	33	8	53	2	13	0	0	0	0
12. When I had trouble or when I had a question, I was able to get help, or find the answer myself.	3	20	9	60	3	20	0	0	0	0
13. I learn well when I study on my own.	1	7	2	13	12	80	0	0	0	0
14. After studying this information, I felt I would do well on the posttest.	2	13	9	60	4	27	0	0	0	0
15. I prefer to study in a group with other students and a teacher.	0	0	1	7	11	73	3	20	0	0

APPENDIX V

Table 27: Comparison of the Results of the Initial and Final Staff Questionnaires

Table 27: Comparison of the Results of the Initial and Final Staff Questionnaires

Item	Adult Basic Education				High School				Registered Nursing Assistant			
	Pre-Survey (n=17)		Post-Survey (n=19)		Pre-Survey (n=11)		Post-Survey (n=11)		Pre-Survey (n=9)		Post-Survey (n=12)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Most students in the program would benefit from a program which included some individualization.	2.1	.56	1.8	.89	2.5	1.13	1.8	.41	1.3	.50	1.2	.58
2. Individualized instruction has been adequately tested in the department in the past.	3.8	.88	3.7	.82	3.6	.81	3.2	.98	3.9**	.78	2.6**	.79
3. No single mode of instruction is likely to suit all students.	1.4	.49	1.4	.50	1.9	.83	1.7	.91	1.4	.53	1.3	.45
4. Developing alternative instruction methods would probably require outside expertise.	3.9	1.05	3.5	.91	3.6	1.04	3.7	.79	2.8	.97	2.7	.89
5. The present courses in this program are suitable for use by parttime students.	3.6	1.06	3.8	.92	3.3	.91	3.1	.70	3.1	1.36	2.8	1.14
6. Parttime students should be actively encouraged to enrol in the regular program.	3.6	1.06	3.4	.90	2.9	1.04	2.5	.93	3.8	.83	2.8	1.03
7. Most students would probably benefit from alternative modes of delivery of instruction.	1.8	.39	1.9	.66	3.0*	.89	2.0*	.45	2.0	.87	1.8	.94
8. Most instructional staff could benefit from inservice programs in instructional methods for adults.	1.9	.66	1.9	.74	2.9	1.14	2.2	.75	1.9	.93	1.5	.52
9. Most staff are adequately aware of the potential uses of technology for alternative delivery of instruction.	4.1*	.70	3.6*	.83	2.8	1.25	3.1	1.04	3.1	1.17	2.7	.99
10. Computers may be used effectively to teach some students in this program. (Computer-assisted instruction)	2.3	.69	2.1	.52	2.5	.82	2.5	.69	1.9	.93	2.0	.43

*Significant beyond the .01 level
**Significant beyond the .05 level

Scale: 1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree

Table 27 (Continued)

Item	Adult Basic Education				High School				Registered Nursing Assistant			
	Pre-Survey (n=17)		Post-Survey (n=19)		Pre-Survey (n=11)		Post-Survey (n=11)		Pre-Survey (n=9)		Post-Survey (n=12)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
11. Computers are best used in this program to manage some routine tasks such as record keeping, drill and practice, etc. (Computer-managed instruction)	2.4	.61	2.6	.90	2.3	.91	2.5	.93	2.0	.71	2.1	.79
12. Most staff in this program feel comfortable with the prospect of computers in the program.	3.7	.61	3.4	.83	3.0	1.00	2.9	.94	3.3	1.00	2.8	.72
13. Most staff in this program are "computer literate."	4.2*	.64	3.7*	.82	3.9	1.20	3.7	.47	4.0	.87	3.4	.90
14. The policy of AVC toward computer-based education is clear.	4.4	.61	4.1	.57	4.0	1.00	3.6	.51	3.7	.50	3.3	.78
15. The role of the instructor in computer-based education is well-understood by most instructors.	4.1	.66	3.9	.62	4.0	1.27	3.1	1.04	3.9	.78	3.4	.79
16. Most staff in this program believe they will have a major voice in determining the use of computers in the program.	3.8**	.56	3.3**	.99	3.2	1.17	3.7	.91	3.6*	.88	2.7*	.49
17. By the time a student leaves this program he should have chosen a realistic career goal.	1.9*	.56	2.8*	.98	2.0	.89	1.9	.94	1.8	.44	1.8	.58
18. All instructional staff should be given a regular opportunity for curriculum development.	2.0	.87	2.3	.75	1.7	.79	2.0	.78	1.9	.33	1.5	.52
19. Most students would probably choose some individualization.	2.7*	.93	2.2*	.71	2.3	.79	3.3	.79	1.8	.97	2.0	1.04
20. Most curriculum changes in this department have resulted in improvements.	2.6	.80	3.0	.88	2.3	.79	3.1	.94	1.9	.33	2.0	.60

*Significant beyond the .01 level
**Significant beyond the .05 level

APPENDIX W

Chronology of the Project

Chronology of the Project

Date	Assessment Activities	Pilot Projects Activities
May, 1982	-- discussion of the McKay study, recommendations of the Curriculum Committee -- review and discussion of institutional publications pertaining to curriculum	-- review of ABE curriculum to identify areas of possible renewal activity; assessment of supportive/resistive elements of the environment -- detailed discussions of change possibilities with interested instructors
June	-- discussions of adult learning needs, systems approach to curriculum design -- discussions of staff expectations of the curriculum consultant -- decision to involve interested staff in curriculum projects as time and resources permit in 1982 - 83	-- decision to revise Ongoing Fractions and Decimals course (MFDO) as initial pilot project
July		-- development of instructional materials and methods for MFDO course (Appendices E-I)
August		-- pilot testing of portions of revised materials -- formative evaluation of methods and materials
Sept.	-- commencement of interviews of staff	Term 1 -- commencement of pilot project with MFDO revised course -- Student Survey administered in weeks 1 and 9 to MFDO, Pre-Trades, and Pre-Clerical Assistant students* -- instructor and researcher begin documenting or performing needed changes to MFDO
Oct.	-- Questionnaire given to ABE, High School and RNA staff	-- student interviews conducted in weeks 6, and 9 - 10

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*Appendix P.

Date	Staff Awareness Activities	Curriculum Renewal Activities
Nov., 1982 - June, 1983	-- commencement of demonstrations of pilot project materials, methods, to interested staff -- identification of staff interested in small-scale projects	-- end of Term 1 -- revisions of MFDO materials, methods for Term 2 -- Term 2 -- decision to add second section of MFDO to meet higher enrolments -- Student Survey administered to MFDO, Pre-Trades, Pre-Clerical Assistant students -- orientation of new MFDO instructor
Dec.		-- interviews of a sample of MFDO students -- plans for English 13 project developed; needs statement, project schedule decided
Jan., 1983		-- end of Term 2 -- evaluation of MFDO by both instructors, researcher; changes to MFDO planned by second instructor -- Term 3 -- two sections of MFDO begin with different procedures -- Student Survey administered to MFDO classes, and three MFD classes, weeks 1 and 9
Feb.		-- Reading 10: needs statement completed (Appendix M) -- ABE English 6-7: needs statement done (Appendix L) -- ABE English 4-5: needs statement done (Appendix K)
March		-- English 13 project implemented -- Reading 10: "Context" module development commenced -- English 13: Analyses* -- ABE English 6-7: analysis completed of "Main Idea" unit (Appendix L ; Analyses*

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*Analyses consisted of: Analysis of Materials and Methods, Analysis of Total Task, and Analysis of Communications (Appendix D).

		-- ABE English 4-5: plan for action on needs statement developed; Analyses* -- MFDO: evaluation of Term 3 results with differing methods -- end of Term 3
April		-- Term 4 -- MFDO: Student Survey administered to MFDO, MFD courses, weeks 1 and 9 -- Reading 10: "Context" pretest used, evaluated; Analyses*
May	-- project results reported to staff -- commencement of second round of interviews	
June	-- second Questionnaire administered to ABE, High School, and RNA staff	-- MFDO students interviewed regarding "final" form of materials, methods used in pilot project -- instructor analyses* -- decisions reached regarding future form of MFDO
July	-- analyses completed of project data	
Oct.	-- summaries provided to all interested staff	

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*See footnote, previous page.

APPENDIX X

Sample Structure Summary -- Instructor

Sample Structure Summary -- Senior Instructor

Sample Structure Summary -- Manager

Staff Structure Summaries

As noted in chapter 2, the procedure for validating interview results was based on Giorgi's (1975) analytic procedure, modified to focus on "structure" elements (those elements of the respondents' replies which deal directly with the question, rather than with feelings about the answer). The researcher made judgments in his note-taking, in his summary documents, and in deciding whether second interviews showed changes in respondents' outlooks. The summaries were an attempt to validate these judgments, as respondents were asked to verify them, or to provide corrections. If they requested it, respondents were re-interviewed.

In this Appendix an example structure summary is presented. This is an example of the documents returned to interviewees for their comments and corrections. After correction, the summaries were used to produce the conclusions presented in Chapters 5 and 6. See Appendix S for a detailed description of Giorgi's analytic method as adopted for use in this procedure.

Sample Structure Summary -- Instructor

October 6, 1982

1. Needs, priorities, opportunities
    - 1.1 Released time on short-term basis by means of "floating" instructor
        - 1.1.1 Staff require time for maintenance of program, on less than 10 week basis
        - 1.1.2 Floater would a) release teacher for a few days, b) give students exposure to another approach, 3) teach students to be adaptable, and d) give support to teachers to do curriculum maintenance
        - 1.1.3 Floater would need flexibility, but regular instructor would be required to provide materials and preparation, so congruity would be maintained

2. What should be done to meet needs?
    - 2.1 Staff should be encouraged to be innovative, not be "textbook" teachers; floater idea would address this
    - 2.2 Expertise of existing staff should be exploited, but cannot be expected as part of normal working day
    - 2.3 Presence of curriculum consultant will help by a) making development more systematic, b) pointing out where current practices are good, and c) showing shortcuts and efficiencies

3. What role do you see for yourself?
    - 3.1 Enjoys curriculum development, and teaching
    - 3.2 Believes that teachers should do curriculum development, and use materials to test them

4. What resources do you require?
    - 4.1 Workshops, interdepartmental and across subject lines, are useful
    - 4.2 University, especially education library, could be an important resource
        - 4.2.1 Feels instructors have knowledge of this resource and would use it if time were given to do so
    - 4.3 Time (10 week term) is a problem; 13 week terms would be better
        - 4.3.1 General attitude is that the best must be made of this problem

6. Views on terms
    - 6.1 Curriculum development
        - 6.1.1 Needed, especially short-term maintenance (see 1.1)
        - 6.1.2 Development should meet needs of specific students
        - 6.1.3 Must be well-coordinated with other elements of program
    - 6.2 Computers/CAI
        - 6.2.1 Works best in sequential learning, but may be applicable in rote, rule-learning tasks in English
        - 6.2.2 Appeals to many AVC students
        - 6.2.3 Staff seem to accept concept, but feel computers are a supplement, should not replace classroom instruction
        - 6.2.4 Feels budget should not be diverted from human resources to computers
        - 6.2.5 Still needs to the sold effectively to staff and students
    - 6.3 The change process in curriculum at AVC
        - 6.3.1 No real change process exists; leaves us open to "bandwagons"

- 6.4 Individualized instruction
    - 6.4.1 Produces mixed results
    - 6.4.2 Opportunities for socialization are limited
    - 6.4.3 Favors more capable students
    - 6.4.4 Makes demands for self-discipline which students may lack
    - 6.4.5 May be more useful in math than English
    - 6.4.6 Is now done at AVC for selected students on individual basis by certain instructors
- 6.5 Modularized curriculum
    - 6.5.1 Does exist in high school English in the form of handouts on specific topics
    - 6.5.2 Materials were developed with the belief that they are not sacred, that topics should be addressed as needed by students
- 6.6 Mastery learning
    - 6.6.1 Used on certain rule-learning tasks in English
    - 6.6.2 Related to need for high standard, to encourage achievement on students' parts
- 6.7 Alternate delivery of instruction
    - 6.7.1 As proposed in learning centre concept, most crucial component is teacher-librarian
    - 6.7.2 In any alternate form of delivery, students must have access to assistance; must not be isolated
    - 6.7.3 Staff attitude toward LRC is positive
    - 6.7.4 Presence of LRC should have positive effects on program development
- 6.8 Adult learning needs/preferences
    - 6.8.1 Students' goals must be considered
    - 6.8.2 Social coping abilities must be considered
    - 6.8.3 Adult self-concept must be preserved
    - 6.8.4 An attitude of independence should be fostered
    - 6.8.5 Student flexibility important goal

Sample Structure Summary -- Senior Instructor

September 20, 1982

1. Priorities, Needs, Opportunities
    - 1.1 Greatest need in math area is for improvement of problem solving and estimation skills of students
    - 1.2 Students need skills which are "functional" and "relevant"
    - 1.3 Shift in emphasis from fractions to decimals must continue
        - 1.3.1 Presently, MFD consists of 70% decimals, 30% fractions
    - 1.4 Coordination with other departments
        - 1.4.1 MA and Math 10 have to articulate
    - 1.5 Calculator use in High School

2. How well are these needs/priorities being met? What should be done?
    - 2.1 Plans underway to use word processor to update problem solving items
    - 2.2 Revisions to MFD have been made, will continue
    - 2.3 Good cooperation being achieved from other department

3. (Deferred, see November 8 session)

4. (Deferred, see November 8 session)

5. Views on MFDO project
    - 5.1 Further development of MFDO is not a priority
        - 5.1.1 Fractions is an especially low priority
    - 5.2 Needs have been identified for Business Education, R.N.A. and High School, and will require attention in the future
    - 5.3 In decimals, problem solving is vital, as is estimation
        - 5.3.1 Metric component has been given less emphasis because of a lack of time

6. Terms
    - 6.1 Deferred to November 8

    - 6.2 Computers
        - 6.2.1 PLATO had many problems: students felt isolated, found PLATO dull; students' reading levels too low to use PLATO effectively; not enough problem solving; students were unsuccessful in the next level (even though they passed MFD final exam)
        - 6.2.2 PLM a better use of PLATO; management is needed

    - 6.3 Deferred to November 8

    - 6.4 Individualized instruction
        - 6.4.1 Has been tried with Red River
        - 6.4.2 Observations: students progressed much more slowly than in teacher-paced group instruction; students missed contact with

other students, teacher; not enough review -- students had poor retention; students prefer several sources of instruction

6.5 Modularized curriculum
  6.5.1 Would like to have whole program modularized, but group instruction and teacher pacing
  6.5.2 Modules would provide alternatives for students who can't handle the classroom mode of learning

6.6 Deferred to November 8

6.7 Alternative delivery of instruction
  6.7.1 Classroom mode of delivery should be primary for most students
  6.7.2 Alternatives should exist for some students
  6.7.3 Group atmosphere is very important; group interaction is vital to learning

6.8 Deferred to November 8

Senior Instructor (continued)

Nov. 8, 1982
Session #2

3. What role do you see for yourself in addressing priorities?
    3.1 Senior Instructors should have a major curriculum role, but present duties prevent them from taking this role
        3.1.1 Changes in intake have increased administrative demands; changes in structure have increased committee work
    3.2 Retreat concluded that role of Seniors needs revision, still not done

4. What resources (personal institutional) do you require?
    4.1 Time
    4.2 "Reallocation of duties" to highlight curriculum responsibilities
    4.3 More software for math lab use of micros

6. Reactions to terms (continued)
    6.1 Curriculum development and change at AVC
        6.1.1 Not enough supervision by Senior Instructors
    6.2 Curriculum development system
        6.1.3 Opportunities for development often occur suddenly, require immediate action
        6.1.4 Nevertheless, much good work is done
        6.1.5 Some parts of the program need more attention than others
    6.6 Mastery learning
        6.6.1 Basic math courses do have different criterion levels for promotion now
        6.6.2 Problem solving criterion levels are lower than operations levels
        6.6.3 Criterion levels are used but testing to specific objectives is lacking in program
            -- students are informed of general objectives of the course as part of the orientation
    6.8 Learning needs of AVC students
        6.8.1 Confidence-building, overcoming of math phobia
        6.8.2 Early classroom experiences should be successful, positive
        6.8.3 Students generally not independent learners, not used to using own initiative
        6.8.4 Many require help outside class routinely
        6.8.5 Serious, real personal problems affect learning
        6.8.6 Non-academic needs requiring counselling or other attention, must be addressed
        6.8.7 Students' goals, strengths/weaknesses must be evaluated and reflected back to the student constantly

Sample Structure Summary — Management

September 20, 1982

1. Priorities and needs of the department
    - 1.1 A systematic approach to maintenance and change in programs
        - 1.1.1 In the past "ad hocracy" has existed; programs have been a "victim" of this
    - 1.2 Analysis of present elements to determine what requires change
        - 1.2.1 Will be based on a perception of changing student needs and growing staff development of awareness of options
    - 1.3 Professional development of staff must continue
        - 1.3.1 The implications of change must be understood
        - 1.3.2 Will contribute to the "climate for change"
        - 1.3.3 The curriculum design workshops are in this vein
    - 1.4 Need to analyze student flow
        - 1.4.1 Determination of student goals and needs will affect curriculum development
    - 1.5 Enhancements to the Student Information System
    - 1.6 Improvement of student functioning
        - 1.6.1 Fundamental goal of all curriculum development efforts
        - 1.6.2 Based on maximum use of resources, emphasis on quality of learning
        - 1.6.3 Both on- and off-site
        - 1.6.4 Requires flexibility in programs, staffinf, delivery modes, times, locations

2. (Deferred to October 25)

3. (Deferred to October 25)

4. (Deferred to October 25)

5. Not applicable to this respondent

6. Terms
    - 6.1 Curriculum development
        - 6.1.1 (As above) Must emphasize quality of learning, maximum use of resources
        - 6.1.2 Flexibility crucial
        - 6.1.3 Will require staff development (e.g. Szabo workshops)
        - 6.1.4 Priorities will vary in different programs, for different students (i.e. Basic Education, ESL, High School may have different needs, priorities)

    - 6.2 Computers
        - 6.2.1 Range of acceptance, optimism exists
        - 6.2.2 Enthusiasts argue greater benefits of micros over PLATO
        - 6.2.3 Perception is that micros have curriculum elements not available on PLATO
        - 6.2.4 Staff generally more interested in micros
        - 6.2.5 Re PLATO: less staff acceptance than of concept of CAI generally; origins of this not clear

September 20, 1982

6.3 Change in education
  6.3.1 Some individuals have more difficulty than others in accepting change
  6.3.2 Staff upset may be avoided by careful timing of change
  6.3.3 Unnecessary resistance may be avoided if planning for change anticipates sources and reasons for resistance
  6.3.4 Change process at A.V.C. begun: computer committee/hardware acquisition; learning resource centre concept; McKay study (the implications of which must now be made more specific); the Szabo workshops

6.4 Individualized instruction
  6.4.1 Much confusion over the meaning of the term
  6.4.2 Should be an "option for students when appropriate"
  6.4.3 While A.V.C. should not become a "correspondence school," there must be access for students who cannot use the fulltime, classroom option

6.5 Deferred to October 25

6.6 Mastery learning (Competency-based learning)
  6.6.1 Should be explored and incorporated
  6.6.2 Different courses and students will require different approaches; modules may be suited to some
  6.6.3 Staff views on modular curriculum/mastery learning varies greatly; recent activities in curriculum have increased awareness of this option, but disagreement of usefulness is great

6.7 Alternate delivery of instruction
  6.7.1 (From above) As part of principle of "options," many such alternatives should exist and will need to be developed

6.8 Deferred to October 25

6.9 CAI
(From above) See computers

Management (continued)

October 25, 1982
Session #2

2. How well are these priorities being met? What should be done?
    - 2.1 Several steps have been or are being taken:
        - 2.1.1 McKay Study
        - 2.1.2 Curriculum Committee
        - 2.1.3 Szabo
    - 2.2 Curriculum development will take different forms depending upon the area in which it is done, realities in various programs
        - 2.2.1 Important differences between areas must be recognized
    - 2.3 Clarification needed:
        - 2.3.1 Relationship with Continuing Education
        - 2.3.2 Learning Resource Centre
        - 2.3.3 Linkages with other programs
        - 2.3.4 Student flow
    - 2.4 In general, the outlook is promising

3. What role do you see for yourself in addressing these priorities?
    - 3.1 "Initiating"; not always directly involved in achievement or follow-through
    - 3.2 Director position and its "province of action" in need of definition
    - 3.3 Ultimately, priorities will include budget, liaison with other divisions, and management support

4. Resources (personal or institutional) required
    - 4.1 "More money"
    - 4.2 Need for better coordination and impact of new initiatives has created need for positions in Voc. Prep.
        - 4.2.1 Need in ESL still under study
    - 4.3 For curriculum development, released time is required

6. Reactions to terms (continued)
    - 6.5 Modularized curriculum
        - 6.5.1 Definition is unclear -- AVC's 10 week terms may be modules
        - 6.5.2 By one defintion, a module is a unit organized by theme
    - 6.8 Learning needs of AVC students
        - 6.8.1 Students have many needs; non-academic needs must take priority
        - 6.8.2 Students often are naive about their alternatives in society, employment, training, social services
        - 6.8.3 Large majority of women; many have traditional conceptions of themselves, with low self-esteem
        - 6.8.4 Frequency of goal change common and must be provided for by programmming